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October 22, 2018

EPA Region 8
Director, Air and Toxics Technical Enforcement Program
Office of Enforcement, Compliance and Environmental Justice
Mail Code 8ENF-AT
1595 Wynkoop Street
Denver, CO 80202-1129

RECEIVED
OCT 24 2018
Office of Enforcement, Compliance
and Environmental Justice

Re: NSPS OOOOa Annual Report

Director, Air Toxics Technical Enforcement Program,

Please find SM Energy's (SM) 2018 annual report for New Source Performance Standards, Subpart OOOOa—Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015. The NSPS OOOOa report is for our Region 8 assets. We have included our official submittal our report for sites in North Dakota and a copy of the report submitted to the Wyoming Department of Environmental Quality for our sites in Wyoming. Please note that SM Energy no longer owns any of these wells and therefore, neither report covers a full calendar year.

As of March 27, 2018, the wells in the Powder River Basin in Wyoming are owned by Northwoods Energy. As of May 31st, the wells in the Williston Basin in North Dakota are owned by Petro-Hunt, LLC.

NSPS OOOOa

SM Energy Company
1775 Sherman St. Suite 1200
Denver, CO 80203
Contact: Greg Schrab
Contact Phone Number: (303) 864-2567

North Dakota Reporting period starting: August 3, 2017
North Dakota Reporting period ending: May 30, 2018



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Certifying Official Statement

Based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate and complete.

(b) (6)

Signature

Oct 17, 2018
Date

Applicable sources:

- §60.5365a (a) Well affected facility that conducts a well completion operation following hydraulic fracturing or refracturing
- §60.5365a (i) Collection of fugitive emissions at a well site.

Included with this letter:

- Spreadsheet with summary containing required reporting data for the component inspections of the fugitive emissions at the well sites.
- Only two wells were completed in North Dakota during the reporting period and they did not have flowback of liquids or gas, these wells went directly to production. The separation and control equipment was present at the time of completion for all facilities.

Please let me know if you have any questions. You can reach me at (303) 864-2567 or GSchrab@sm-energy.com.

Thank you

(b) (6)

Greg Schrab
Corporate EH&S Manager
SM Energy Company

SM Energy Company
Rocky Mountain Region
NSPS OOOa Report
August 2, 2018- May 30, 2018

Facility Record No. *	Company Name	Facility Name *	US Well ID or US Well ID Associated with the Affected Facility	QTR QTR	Sec	TWP	RNG	Lat	Long	County *	State Abbreviation*
1	SM Energy Company	HAGEN 3-28HS CTB	33-023-01336	NENW	28	160N	99W	(b) (9)	(b) (9)	DIVIDE	ND
2	SM Energy Company	HAGEN 3-28HN	33-023-01337	NENW	28	160N	99W			DIVIDE	ND
3	SM Energy Company	KARLBERG 14-12HN	33-023-01286	SESW	12	161N	099W			DIVIDE	ND
4	SM Energy Company	KARLBERG 14-12HS	33-023-01287	SESW	12	161N	099W			DIVIDE	ND
5	SM Energy Company	L JOHNSON 4-30HN	33-023-01332	NWNW	Lot 1 30	160N	99W			DIVIDE	ND
6	SM Energy Company	L JOHNSON 4-30HS	33-023-01333	NWNW	Lot 1 30	160N	99W			DIVIDE	ND
7	SM Energy Company	DOHMSTRIECH 15B-20HN	33-023-01280	SWSE	20	161N	99W			DIVIDE	ND
8	SM Energy Company	DOHMSTRIECH 15-20HS	33-023-01281	SWSE	20	161N	99W			DIVIDE	ND
9	SM Energy Company	BURTMAN 14-23HN	33-023-01351	SESW	23	161N	99W			DIVIDE	ND
10	SM Energy Company	BURTMAN 14-23HS	33-023-01352	SESW	23	161N	99W			DIVIDE	ND
11	SM Energy Company	NORMA 1B-26HS	33-023-01297	NENE	26	163N	100W			DIVIDE	ND
12	SM Energy Company	SCHELL 3B-28HN	33-023-01372	NENW	28	161N	98W			DIVIDE	ND
13	SM Energy Company	SCHELL 3-28HSA	33-023-01371	NENW	28	161N	98W			DIVIDE	ND
14	SM Energy Company	ASHLEY 3-26HS	33-023-01293	NENW	26	163N	100W			DIVIDE	ND
15	SM Energy Company	BUD 1-26HS	33-023-01296	NENE	26	163N	100W			DIVIDE	ND
16	SM Energy Company	GERTRUDE 1-26HN	33-023-01298	NENE	26	163N	100W			DIVIDE	ND
17	SM Energy Company	HELEN 1B-26HN	33-023-01299	NENE	26	163N	100W			DIVIDE	ND
18	SM Energy Company	JESSICA 3B-26HN	33-023-01294	NENW	26	163N	100W			DIVIDE	ND
19	SM Energy Company	RILVE 3B-26HS	33-023-01292	NENW	26	163N	100W			DIVIDE	ND
20	SM Energy Company	WHITNEY 3-26HN	33-023-01295	NENW	26	163N	100W			DIVIDE	ND
21	SM Energy Company	HERLAND 14-12HN	33-023-01361	SESW	12	160N	99W			DIVIDE	ND
22	SM Energy Company	HERLAND 14-12HS	33-023-01362	SESW	12	160N	99W			DIVIDE	ND
23	SM Energy Company	LARSON FEDERAL 15-34H	33-023-01365	SWSE	34	162N	100W			DIVIDE	ND
24	SM Energy Company	BISSONNETTE 14B-31HS	33-023-01379	SESW	31	161N	97W			DIVIDE	ND
25	SM Energy Company	BISSONNETTE 14B-31HN	33-023-01378	SESW	31	161N	97W			DIVIDE	ND
26	SM Energy Company	HAY FARMS 14B-20HN	33-023-01382	SESW	20	160N	98W			DIVIDE	ND
27	SM Energy Company	MO FARMS 15-21HN	33-023-01376	SWSE	21	161N	99W			DIVIDE	ND
28	SM Energy Company	MO FARMS 15-21HS	33-023-01375	SWSE	21	161N	99W			DIVIDE	ND
29	SM Energy Company	M HAUGEN 14B-24HN	33-023-01394	SESW	24	163N	099W			DIVIDE	ND
30	SM Energy Company	NYSTUEN 14-35HN	33-023-01392	SESW	35	161N	98W			DIVIDE	ND
31	SM Energy Company	NYSTUEN 14B-35HS	33-023-01393	SESW	35	161N	98W			DIVIDE	ND
32	SM Energy Company	STEVENS 2B-18HN	33-023-01404	NWNE	18	160N	99W			DIVIDE	ND
33	SM Energy Company	BRONKAR 2-6HN	33-023-01396	Lot 2	6	160N	098W			DIVIDE	ND
34	SM Energy Company	BRONKAR 2B-6HS	33-023-01395	Lot 2	6	160N	098W			DIVIDE	ND
35	SM Energy Company	BETH 4B-14HS	33-023-01304	NWNW	14	163N	100W			DIVIDE	ND
36	SM Energy Company	COLLEEN 4-14HS	33-023-01301	NWNW	14	163N	100W			DIVIDE	ND
37	SM Energy Company	MARIA 4B-14HN	33-023-01303	NENW	29	163N	099W			DIVIDE	ND
38	SM Energy Company	NANCY 4-14HN	33-023-01302	NWNW	14	163N	100W			DIVIDE	ND
39	SM Energy Company	HEATHER 1B-15HN	33-023-01314	NENE	15	163N	100W			DIVIDE	ND
40	SM Energy Company	ROBERT 1-15HS	33-023-01315	NENE	15	163N	100W			DIVIDE	ND
41	SM Energy Company	SHAWN 1B-15HS	33-023-01313	NENE	15	163N	100W			DIVIDE	ND
42	SM Energy Company	ALVIN 4B-15HS	33-023-01317	NWNW	15	163N	100W			DIVIDE	ND
43	SM Energy Company	DK FEDERAL 4-15HNA	33-023-01320	NWNW	15	163N	100W			DIVIDE	ND
44	SM Energy Company	GLADYS 4-15HS	33-023-01321	NWNW	15	163N	100W			DIVIDE	ND
45	SM Energy Company	RJ FEDERAL 4B-15HN	33-023-01319	NWNW	15	163N	100W			DIVIDE	ND
46	SM Energy Company	RM FEDERAL 4-15HNB	33-023-01318	NWNW	15	163N	100W			DIVIDE	ND
47	SM Energy Company	JEREMY FEDERAL 14B-10HN	33-023-01373	SESW	10	163N	100W			DIVIDE	ND
48	SM Energy Company	SANDRA 14B-10HS	33-023-01374	SESW	10	163N	100W			DIVIDE	ND
49	SM Energy Company	INEZ 1B-16HN	33-023-01341	NENE	16	163N	100W			DIVIDE	ND
50	SM Energy Company	LOREN 1B-16HS	33-023-01342	NENE	16	163N	100W			DIVIDE	ND
51	SM Energy Company	ROLIE 1-16HN	33-023-01343	NENE	16	163N	100W			DIVIDE	ND
52	SM Energy Company	SELLE 4B-4HN	33-023-01408	NWNW	4	161N	100W			DIVIDE	ND
53	SM Energy Company	LYSTAD 1-25HS	33-023-01407	NENE	25	162N	099W			DIVIDE	ND
54	SM Energy Company	ANNE 13-19HN	33-023-01326	Lot 4	19	163N	99W			DIVIDE	ND
55	SM Energy Company	ANNE 13-19HS	33-023-01325	Lot 4	19	163N	99W			DIVIDE	ND
56	SM Energy Company	ANNE 13B-19HN	33-023-01323	Lot 4	19	163N	99W			DIVIDE	ND
57	SM Energy Company	ANNE 13B-19HS	33-023-01324	Lot 4	19	163N	99W			DIVIDE	ND
58	SM Energy Company	MARTIN 2-4HN	33-023-01406	Lot 2	4	160N	99W			DIVIDE	ND
59	SM Energy Company	RUSSELL 2B-4HS	33-023-01405	Lot 2	4	160N	99W			DIVIDE	ND
60	SM Energy Company	OWAN 14B-22HN	33-023-01413	SESW	22	160N	99W			DIVIDE	ND
61	SM Energy Company	THOMPSON BROS. FEDERAL 2B-17HN	33-023-01416	NWNE	17	160N	99W			DIVIDE	ND
62	SM Energy Company	THOMPSON BROS. 2B-17HS	33-023-01415	NWNE	17	160N	99W			DIVIDE	ND

SM Energy Company
Rocky Muntain Region
NSPS OOOOa Report
Aug. 2, 2017- May 30, 2018

				WDigital Photo in lieu of Records Required by §60.5420a(c)(1)(i) through (iv)
Facility Record No. *	United States Well Number*	Records of deviations ents	Well Completion ID * (§60.5420a(b)(2)(i) and §60.5420a(c)(1)(i))	Digital Photograph with Date Taken and Latitude and Longitude Imbedded (or with Visible GPS
61	33-023-01416	None, no flowback	Thompson Bros. Federal 2B-17HN completion	No flowback
62	33-023-01415	None, no flowback	Thompson Bros. 2B-17HS	No flowback

Facility Record	Identification of Each Affected Facility * (\$60.5420a)(b)(1)	Date of Survey	Survey Begin Time	Survey End Time	Name of Surveyor * (\$60.5420a)(b)(7)(iii)	Ambient Temp, Sky cond, Max Wind Speed	Monitoring Instrument Used * (\$60.5420a)(b)(7)(v))	Deviations From Monitoring Plan	Type of Comp Fug Em Detected	Number of Each Comp Type Fug Em Detected	Date of Successful Repair	Type of Instrument Used to Resurvey Repaired Components	Training and Experience of Surveyor * (\$60.5420a)(b)(7)(iii)
1	HAGEN 3-28HS CTB	5/19/18	11:49 AM	1:32 PM	Sam Thome / Cory Carpenter	62 F, Partly Cloudy, 2.9 mph	FLIR GF 320 Camera	None	Thief hatches, valves (Hagen CTB)	2, 2	5/19/2018	FLIR GF 320 Camera	2 years, FLIR company training
2	HAGEN 3-28HN	5/19/18	11:49 AM	1:32 PM	Sam Thome / Cory Carpenter	62 F, Partly Cloudy, 2.9 mph	FLIR GF 320 Camera	None	See # 1 (Hagen CTB)	-	-	-	2 years, FLIR company training
3	KARLBERG 14-12HN	5/23/18	3:15 PM	4:42 PM	Sam Thome / Cory Carpenter	73 F, Overcast, 8.8 mph	FLIR GF 320 Camera	None	Thief hatches, valves (Karlberg CTB)	2, 1	5/23/2018	FLIR GF 320 Camera	2 years, FLIR company training
4	KARLBERG 14-12HS	5/23/18	3:15 PM	4:42 PM	Sam Thome / Cory Carpenter	73 F, Overcast, 8.8 mph	FLIR GF 320 Camera	None	See # 3 (Karlberg CTB)	-	-	-	2 years, FLIR company training
5	L JOHNSON 4-30HN	5/19/18	10:40 AM	11:40 AM	Sam Thome / Cory Carpenter	55 F, Partly Cloudy, 2.9 mph	FLIR GF 320 Camera	None	Piping/fittings (Johnson CTB)	2	5/19/2018	FLIR GF 320 Camera	2 years, FLIR company training
6	L JOHNSON 4-30HS	5/19/18	10:40 AM	11:40 AM	Sam Thome / Cory Carpenter	55 F, Partly Cloudy, 2.9 mph	FLIR GF 320 Camera	None	See #5 (Johnson CTB)	-	-	-	2 years, FLIR company training
7	DOHMSTREICH 15B-20HN	5/23/18	9:22 PM	10:15 PM	Sam Thome / Cory Carpenter	75 F, Partly Cloudy, 4.6 mph	FLIR GF 320 Camera	None	Thief hatch, valve (Dom CTB)	4, 1	5/23/2018	FLIR GF 320 Camera	2 years, FLIR company training
8	DOHMSTREICH 15-20HS	5/23/18	9:22 PM	10:15 PM	Sam Thome / Cory Carpenter	75 F, Partly Cloudy, 4.6 mph	FLIR GF 320 Camera	None	See #7 (Domstreich CTB)	-	-	-	2 years, FLIR company training
9	BURTMAN 14-23HN	5/23/18	6:41 PM	7:48 PM	Sam Thome / Cory Carpenter	81 F, Partly Cloudy, 11.5 mph	FLIR GF 320 Camera	None	Thief hatch, valve (Burtman CTB)	4, 1	5/23/2018	FLIR GF 320 Camera	2 years, FLIR company training
10	BURTMAN 14-23HS	5/23/18	6:41 PM	7:48 PM	Sam Thome / Cory Carpenter	81 F, Partly Cloudy, 11.5 mph	FLIR GF 320 Camera	None	See # 9 (Burtman CTB)	-	-	-	2 years, FLIR company training
11	NORMA 1B-26HS	5/9/18	12:50 PM	4:15 PM	Sam Thome / Cory Carpenter	59 F, Clear, 20.7 mph	FLIR GF 320 Camera	None	See # 15 (Almos Farms CTB)	-	-	-	2 years, FLIR company training
12	SCHILL 3B-28HN	5/19/18	4:34 PM	5:12 PM	Sam Thome / Cory Carpenter	71 F, Partly Cloudy, 4.5 mph	FLIR GF 320 Camera	None	None	-	-	-	2 years, FLIR company training
13	SCHILL 3-28HSA	5/19/18	4:34 PM	5:12 PM	Sam Thome / Cory Carpenter	71 F, Partly Cloudy, 4.5 mph	FLIR GF 320 Camera	None	None	-	-	-	2 years, FLIR company training
14	ASHLEY 3-26HS	5/11/18	3:55 PM	5:50 PM	Sam Thome / Cory Carpenter	58 F, Overcast, 6.9 mph	FLIR GF 320 Camera	None	None (Gul 4-26H CTB)	-	-	-	2 years, FLIR company training
15	BUD 1-26HS	5/9/18	12:50 PM	4:15 PM	Sam Thome / Cory Carpenter	59 F, Clear, 20.7 mph	FLIR GF 320 Camera	None	Thief hatch (Almos Farms CTB)	1	5/9/2018	FLIR GF 320 Camera	2 years, FLIR company training
16	GERTRUDE 1-26HN	5/9/18	12:50 PM	4:15 PM	Sam Thome / Cory Carpenter	59 F, Clear, 20.7 mph	FLIR GF 320 Camera	None	See # 15 (Almos Farms CTB)	-	-	-	2 years, FLIR company training
17	HELEN 1B-26HN	5/9/18	12:50 PM	4:15 PM	Sam Thome / Cory Carpenter	59 F, Clear, 20.7 mph	FLIR GF 320 Camera	None	See # 15 (Almos Farms CTB)	-	-	-	2 years, FLIR company training
18	JESSICA 3B-26HN	5/11/18	3:55 PM	5:50 PM	Sam Thome / Cory Carpenter	58 F, Overcast, 6.9 mph	FLIR GF 320 Camera	None	See #14 (Gul 4-26H CTB)	-	-	-	2 years, FLIR company training
19	RILEY 3B-26HS	5/11/18	3:55 PM	5:50 PM	Sam Thome / Cory Carpenter	58 F, Overcast, 6.9 mph	FLIR GF 320 Camera	None	See #14 (Gul 4-26H CTB)	-	-	-	2 years, FLIR company training
20	WHITNEY 3-26HN	5/11/18	3:55 PM	5:50 PM	Sam Thome / Cory Carpenter	58 F, Overcast, 6.9 mph	FLIR GF 320 Camera	None	See #14 (Gul 4-26H CTB)	-	-	-	2 years, FLIR company training
21	HERLAND 14-12HN	5/19/18	2:13 PM	4:13 PM	Sam Thome / Cory Carpenter	69 F, Partly Cloudy, 6.5 mph	FLIR GF 320 Camera	None	Valve, Thief Hatch, Piping	1, 2, 1	5/19/2018	FLIR GF 320 Camera	2 years, FLIR company training
22	HERLAND 14-12HS	5/19/18	2:13 PM	4:13 PM	Sam Thome / Cory Carpenter	69 F, Partly Cloudy, 6.5 mph	FLIR GF 320 Camera	None	See # 21 (Herland CTB)	-	-	-	2 years, FLIR company training
23	LARSON FEDERAL 15-34H	5/17/18	10:50 AM	12:30 PM	Sam Thome / Cory Carpenter	53 F, Partly Cloudy, 13.0 mph	FLIR GF 320 Camera	None	Thief Hatch (Marvin CTB)	1	5/17/2018	FLIR GF 320 Camera	2 years, FLIR company training
24	BISSONNETTE 14B-31HS	5/22/18	8:45 AM	9:55 AM	Sam Thome / Cory Carpenter	71 F, Partly Cloudy, 3.2 mph	FLIR GF 320 Camera	None	None	-	-	-	2 years, FLIR company training
25	BISSONNETTE 14B-31HN	5/22/18	8:45 AM	9:55 AM	Sam Thome / Cory Carpenter	71 F, Partly Cloudy, 3.2 mph	FLIR GF 320 Camera	None	None	-	-	-	2 years, FLIR company training
26	HAY FARMS 14B-20HN	5/19/18	5:45 PM	6:15 PM	Sam Thome / Cory Carpenter	73 F, Partly Cloudy, 3.9 mph	FLIR GF 320 Camera	None	None	-	-	-	2 years, FLIR company training
27	MO FARMS 15-21HN	5/23/18	8:01 PM	9:05 PM	Sam Thome / Cory Carpenter	77 F, Partly Cloudy, 8.2 mph	FLIR GF 320 Camera	None	Thief Hatch (MO Farms CTB)	6	5/23/2018	FLIR GF 320 Camera	2 years, FLIR company training
28	MO FARMS 15-21HS	5/23/18	8:01 PM	9:05 PM	Sam Thome / Cory Carpenter	77 F, Partly Cloudy, 8.2 mph	FLIR GF 320 Camera	None	See # 27 (MO Farms CTB)	-	-	-	2 years, FLIR company training
29	M HAUGEN 14B-24HN	5/19/18	9:38 AM	10:33 AM	Sam Thome / Cory Carpenter	55 F, Partly Cloudy, 3.2 mph	FLIR GF 320 Camera	None	Fitting	1	5/19/2018	FLIR GF 320 Camera	2 years, FLIR company training
30	NYSTUEN 14-35HN	5/22/18	10:08 AM	12:15 PM	Sam Thome / Cory Carpenter	73 F, Partly Cloudy, 4.8 mph	FLIR GF 320 Camera	None	None	-	-	-	2 years, FLIR company training
31	NYSTUEN 14B-35HS	5/22/18	10:08 AM	12:15 PM	Sam Thome / Cory Carpenter	73 F, Partly Cloudy, 4.8 mph	FLIR GF 320 Camera	None	None	-	-	-	2 years, FLIR company training
32	STEVENS 2B-18HN	5/18/18	7:50 PM	8:25 PM	Sam Thome / Cory Carpenter	60 F, Overcast, 10.3 mph	FLIR GF 320 Camera	None	None	-	-	-	2 years, FLIR company training
33	BRONKAR 2-6HN	5/22/18	12:19 PM	2:55 PM	Sam Thome / Cory Carpenter	76 F, Partly Cloudy, 6.2 mph	FLIR GF 320 Camera	None	Fittings, Thief hatch (Bronkar CTB)	2, 1	5/22/2018	FLIR GF 320 Camera	2 years, FLIR company training
34	BRONKAR 2B-6HS	5/22/18	12:19 PM	2:55 PM	Sam Thome / Cory Carpenter	76 F, Partly Cloudy, 6.2 mph	FLIR GF 320 Camera	None	See #33 (Bronkar CTB)	-	-	-	2 years, FLIR company training
35	BETH 4B-14HS	5/11/18	10:30 AM	11:15 AM	Sam Thome / Cory Carpenter	44 F, Overcast, 10.3 mph	FLIR GF 320 Camera	None	None (Riede CTB)	-	-	-	2 years, FLIR company training
36	COLLEEN 4-14HS	5/11/18	10:30 AM	11:15 AM	Sam Thome / Cory Carpenter	44 F, Overcast, 10.3 mph	FLIR GF 320 Camera	None	None (Riede CTB)	-	-	-	2 years, FLIR company training
37	MARIA 4B-14HN	5/11/18	10:30 AM	11:15 AM	Sam Thome / Cory Carpenter	44 F, Overcast, 10.3 mph	FLIR GF 320 Camera	None	None (Riede CTB)	-	-	-	2 years, FLIR company training
38	NANCY 4-14HN	5/11/18	10:30 AM	11:15 AM	Sam Thome / Cory Carpenter	44 F, Overcast, 10.3 mph	FLIR GF 320 Camera	None	None (Riede CTB)	-	-	-	2 years, FLIR company training
39	HEATHER 1B-15HN	5/18/18	11:20 AM	1:00 PM	Sam Thome / Cory Carpenter	44 F, Overcast, 9.2 mph	FLIR GF 320 Camera	None	Thief Hatch, Fitting (Torg 1-15H CTB)	2, 1	5/18/2018	FLIR GF 320 Camera	2 years, FLIR company training
40	ROBERT 1-15HS	5/18/18	11:20 AM	1:00 PM	Sam Thome / Cory Carpenter	44 F, Overcast, 9.2 mph	FLIR GF 320 Camera	None	See # 39 (Torg 1-15H CTB)	-	-	-	2 years, FLIR company training
41	SHAWN 1B-15HS	5/18/18	11:20 AM	1:00 PM	Sam Thome / Cory Carpenter	44 F, Overcast, 9.2 mph	FLIR GF 320 Camera	None	See # 39 (Torg 1-15H CTB)	-	-	-	2 years, FLIR company training
42	ALVIN 4B-15HS	5/11/18	1:15 PM	3:30 PM	Sam Thome / Cory Carpenter	46 F, Overcast, 12.5 mph	FLIR GF 320 Camera	None	None (Alvin CTB)	-	-	-	2 years, FLIR company training
43	DK FEDERAL 4-15HNA	5/11/18	1:15 PM	3:30 PM	Sam Thome / Cory Carpenter	46 F, Overcast, 12.5 mph	FLIR GF 320 Camera	None	See #42 (Alvin CTB)	-	-	-	2 years, FLIR company training
44	GLADYS 4-15HS	5/11/18	1:15 PM	3:30 PM	Sam Thome / Cory Carpenter	46 F, Overcast, 12.5 mph	FLIR GF 320 Camera	None	See #42 (Alvin CTB)	-	-	-	2 years, FLIR company training
45	RJ FEDERAL 4B-15HN	5/11/18	1:15 PM	3:30 PM	Sam Thome / Cory Carpenter	46 F, Overcast, 12.5 mph	FLIR GF 320 Camera	None	See #42 (Alvin CTB)	-	-	-	2 years, FLIR company training
46	RM FEDERAL 4-15HNB	5/11/18	1:15 PM	3:30 PM	Sam Thome / Cory Carpenter	46 F, Overcast, 12.5 mph	FLIR GF 320 Camera	None	See #42 (Alvin CTB)	-	-	-	2 years, FLIR company training
47	JEREMY FEDERAL 14B-10HN	5/11/18	1:15 PM	3:30 PM	Sam Thome / Cory Carpenter	46 F, Overcast, 12.5 mph	FLIR GF 320 Camera	None	See #42 (Alvin CTB)	-	-	-	2 years, FLIR company training
48	SANDRA 14B-10HS	5/11/18	1:15 PM	3:30 PM	Sam Thome / Cory Carpenter	46 F, Overcast, 12.5 mph	FLIR GF 320 Camera	None	See #42 (Alvin CTB)	-	-	-	2 years, FLIR company training
49	INEZ 1B-16HN	5/11/18	1:15 PM	3:30 PM	Sam Thome / Cory Carpenter	46 F, Overcast, 12.5 mph	FLIR GF 320 Camera	None	See #42 (Alvin CTB)	-	-	-	2 years, FLIR company training
50	LOREN 1B-16HS	5/11/18	1:15 PM	3:30 PM	Sam Thome / Cory Carpenter	46 F, Overcast, 12.5 mph	FLIR GF 320 Camera	None	See #42 (Alvin CTB)	-	-	-	2 years, FLIR company training
51	ROLIE 1-16HN	5/11/18	1:15 PM	3:30 PM	Sam Thome / Cory Carpenter	46 F, Overcast, 12.5 mph	FLIR GF 320 Camera	None	See #42 (Alvin CTB)	-	-	-	2 years, FLIR company training
52	SELLE 4B-4HN	5/17/18	12:35 PM	1:10 PM	Sam Thome / Cory Carpenter	56 F, Overcast, 21.9 mph	FLIR GF 320 Camera	None	None (Paul 3-4HS CTB)	-	-	-	2 years, FLIR company training
53	LYSTAD 1-25HS	5/22/18	4:00 PM	4:50 PM	Sam Thome / Cory Carpenter	83 F, Overcast, 13.7 mph	FLIR GF 320 Camera	None	None	-	-	-	2 years, FLIR company training

Facility Record	Identification of Each Affected Facility * (§60.5420a(b)(1))	Date of Survey	Survey Begin Time	Survey End Time	Name of Surveyor * (§60.5420a(b)(7)(iii))	Ambient Temp, Sky cond, Max Wind Speed	Monitoring Instrument Used * (§60.5420a(b)(7)(v))	Deviations From Monitoring Plan	Type of Comp Fug Em Detected	Number of Each Comp Type Fug Em Detected	Date of Successful Repair	Type of Instrument Used to Resurvey Repaired Components	Training and Experience of Surveyor * (§60.5420a(b)(7)(iii))
54	ANNE 13-19HN	4/10/18	10:45 AM	2:55 PM	Sam Thome / Cory Carpenter	28 F, Clear, 9.7 mph	FLIR GF 320 Camera	None	Thief Hatch (Torg 14-19H CTB)	4	4/10/2018	FLIR GF 320 Camera	2 years, FLIR company training
55	ANNE 13-19HS	4/10/18	10:45 AM	2:55 PM	Sam Thome / Cory Carpenter	28 F, Clear, 9.7 mph	FLIR GF 320 Camera	None	See #54 (Torg 14-19H CTB)	-	-	-	2 years, FLIR company training
56	ANNE 13B-19HN	4/10/18	10:45 AM	2:55 PM	Sam Thome / Cory Carpenter	28 F, Clear, 9.7 mph	FLIR GF 320 Camera	None	See #54 (Torg 14-19H CTB)	-	-	-	2 years, FLIR company training
57	ANNE 13B-19HS	4/10/18	10:45 AM	2:55 PM	Sam Thome / Cory Carpenter	28 F, Clear, 9.7 mph	FLIR GF 320 Camera	None	See #54 (Torg 14-19H CTB)	-	-	-	2 years, FLIR company training
58	MARTIN 2-4HN	5/23/18	5:11 PM	6:16 PM	Sam Thome / Cory Carpenter	77 F, Overcast, 7.2 mph	FLIR GF 320 Camera	None	Valve, Thief Hatch (Martin CTB)	1, 1	5/23/2018	FLIR GF 320 Camera	2 years, FLIR company training
59	RUSSELL 2B-4HS	5/23/18	5:11 PM	6:16 PM	Sam Thome / Cory Carpenter	77 F, Overcast, 7.2 mph	FLIR GF 320 Camera	None	See #58 (Martin CTB)	-	-	-	2 years, FLIR company training
60	OWAN 14B-22HN	5/19/18	1:40 PM	2:05 PM	Sam Thome / Cory Carpenter	69 F, Partly Cloudy, 2.5 mph	FLIR GF 320 Camera	None	None	-	-	-	2 years, FLIR company training
61	THOMPSON BROS. FEDERAL 2B-17	5/18/2018	6:20 PM	7:45 PM	Sam Thome / Cory Carpenter	60 F, Overcast, 9.2 mph	FLIR GF 320 Camera	None	Thief Hatch, Valve (Tho Bro CTB)	5, 1	5/18/2018	FLIR GF 320 Camera	2 years, FLIR company training
62	THOMPSON BROS. 2B-17HS	5/18/2018	6:20 PM	7:45 PM	Sam Thome / Cory Carpenter	60 F, Overcast, 9.2 mph	FLIR GF 320 Camera	None	See #61 (Tho Bro CTB)	-	-	-	2 years, FLIR company training



1775 Sherman Street
Suite 1200
Denver, Colorado 80203
303.861.8140
303.861.0934
SM-Energy.com

October 17, 2018

Nancy Vehr
Administrator
Division of Air Quality
Department of Environmental Quality
200 West 17th Street
Cheyenne, WY 82002

Re: NSPS OOOOa Annual Report

Ms. Vehr,

Please find SM Energy's (SM) 2018 annual report for New Source Performance Standards, Subpart OOOOa—Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015. The NSPS OOOOa report is for our Wyoming assets. Please note that SM Energy no longer owns any of these wells and therefore, the report does not cover a full calendar year.

As of March 27, 2018, the wells in the Powder River Basin in Wyoming are owned by Northwoods Energy.

NSPS OOOOa

SM Energy Company
1775 Sherman St. Suite 1200
Denver, CO 80203
Contact: Greg Schrab
Contact Phone Number: (303) 864-2567

Reporting period starting: August 3, 2017

Reporting period ending: March 27, 2018



1775 Sherman Street
Suite 1200
Denver, Colorado 80203
303.861.8140
303.861.0934
SM-[Energy.com](http://SM-Energy.com)

Certifying Official Statement

Based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate and complete.

(b) (6)

Signature

Oct 16, 2018
Date

Applicable sources:

- §60.5365a (a) Well affected facility that conducts a well completion operation following hydraulic fracturing or refracturing
- §60.5365a (i) Collection of fugitive emissions at a well site.

Included with this letter:

- Spreadsheet with summary containing required reporting data for the component inspections of the fugitive emissions at the well sites.
- Photos of well completions showing that equipment was in place to capture and control emission generated during completion.

Please let me know if you have any questions. You can reach me at (303) 864-2567 or GSchrab@sm-energy.com.

Thank you

(b) (6)

Greg Schrab
Corporate EH&S Manager
SM Energy Company

SM Energy Company
Rocky Mountain Region
NSPS OOOGa Report
August 3, 2017- March 26, 2018

Facility Record No. *	Company Name	Facility Name *	US Well ID or US Well ID Associated with the Affected Facility	QTR QTR	Sec	TWP	RNG	Lat	Long	County *	State Abbreviation*	FDOP	Beginning Date of Reporting Period *	Ending Date of Reporting Period *	Responsible Agency Facility ID (State Facility Identifier)	Notes
1	SM Energy Company	TRIGGER FEDERAL 4176-16-21-1FH	49-005-62135	NENW	16	41N	76W	(b) (9) (b) (9)		CAMPBELL	WY	9/24/2015	8/3/2017	3/26/2018		Sold to Northwoods Energy
2	SM Energy Company	DICE FEDERAL 3976-8-5-1FH	49-009-29502	SESE	8	39N	76W			CONVERSE	WY	11/1/2015	8/3/2017	3/26/2018		Sold to Northwoods Energy
3	SM Energy Company	PADDYS IRISH FED 3976-26-25-1FH	49-009-29944	SWNW	26	39N	76W			CONVERSE	WY	12/7/2015	8/3/2017	3/26/2018		Sold to Northwoods Energy
4	SM Energy Company	CHICO FEDERAL 4075-29-32-1FH	49-009-29368	NENW	29	40N	75W			CONVERSE	WY	12/16/2015	8/3/2017	3/26/2018		Sold to Northwoods Energy
5	SM Energy Company	ALAMO FED 3976-33-28-1FH	49-009-30103	NWNW	4	38N	76W			CONVERSE	WY	8/9/2016	8/3/2017	3/26/2018		Sold to Northwoods Energy
6	SM Energy Company	MAGNOLIA FED 3875-28-33-1FH	49-009-29836	SESE	21	38N	75W			CONVERSE	WY	11/28/2016	8/3/2017	3/26/2018		Sold to Northwoods Energy
7	SM Energy Company	SORREL STATE 3875-21-16-1FH	49-009-30310	SWSE	21	38N	75W			CONVERSE	WY	11/28/2016	8/3/2017	3/26/2018		Sold to Northwoods Energy
8	SM Energy Company	CANNON FED 3876-1-12-1FH	49-009-30295	NWNW	1	38N	76W			CONVERSE	WY	1/20/2017	8/3/2017	3/26/2018		Sold to Northwoods Energy
9	SM Energy Company	BUTTERMILK STATE 3976-15-22-1FH	49-009-29560	SESE	10	39N	76W			CONVERSE	WY	5/2/2017	8/3/2017	3/26/2018		Sold to Northwoods Energy
10	SM Energy Company	BISCUIT STATE 3976-15-22-2FH	49-009-29943	SESE	10	39N	76W			CONVERSE	WY	5/6/2017	8/3/2017	3/26/2018		Sold to Northwoods Energy
11	SM Energy Company	GNEISS FED 4075-27-34-1SH	49-009-29652	SWSW	22	40N	75W			CONVERSE	WY	6/14/2017	8/3/2017	3/26/2018		Sold to Northwoods Energy
12	SM Energy Company	GOLDEN SPIKE FED 4076-9-4-1SH	49-009-30316	SESE	9	40N	76W			CONVERSE	WY	8/3/2017	8/3/2017	3/26/2018		Sold to Northwoods Energy
13	SM Energy Company	ARMY MULE FED 3976-2-11-1FH	49-009-29428	NWNW	2	39N	76W			CONVERSE	WY	10/1/2017	8/3/2017	3/26/2018		Sold to Northwoods Energy
14	SM Energy Company	KATY FED 3876-10-15-22-1FH	49-009-32863	NESE	10	38N	76W			CONVERSE	WY	12/23/2017	8/3/2017	3/26/2018		Sold to Northwoods Energy
15	SM Energy Company	HOOPER FED 3976-3-10-1FH	49-009-31680	SWSE	34	40N	76W			CONVERSE	WY	1/23/2018	8/3/2017	3/26/2018		Sold to Northwoods Energy
16	SM Energy Company	SLURRY BOMBER FED 4076-34-27-1SH	49-009-29251	SWSE	34	40N	76W			CONVERSE	WY	1/23/2018	8/3/2017	3/26/2018		Sold to Northwoods Energy
17	SM Energy Company	SAWTOOTH FED 3975-11-2-1SH	49-009-29880	SWSW	11	39N	75W			CONVERSE	WY	2/27/2018	8/3/2017	3/26/2018		Sold to Northwoods Energy
18	SM Energy Company	POWDER HOUND FED 3976-14-23-1SH	49-009-29633	NWNW	14	39N	76W			CONVERSE	WY	9/22/2017	8/3/2017	3/26/2018		Sold to Northwoods Energy

SM Energy Company
Rocky Mountain Region
NSPS OOOOa Report
August 3, 2017- March 26, 2018

				WDigital Photo in lieu of Records Required by §60.5420a(c)(1)(i) through (iv)
Facility Record No. *	United States Well Number*	Records of deviations ents	Well Completion ID * (§60.5420a(b)(2)(i) and §60.5420a(c)(1)(i))	Digital Photograph with Date Taken and Latitude and Longitude Imbedded (or with Visible GPS
14	49-009-32863		KATY FED 3876-10-15-22-1FH	See attached
15	49-009-31680		HOOPER FED 3976-3-10-1FH	See attached
16	49-009-29251		SLURRY BOMBER FED 4076-34-27-1SH	See attached
17	49-009-29880		SAWTOOTH FED 3975-11-2-1SH	See attached

Notes: There were no components that were not repaired within the time frame, no hard to monitor components, no delay of repair

Facility Record	Identification of Each Affected Facility * (\$60.5420a(b)(1))	Date of Survey	Survey Begin Time	Survey End Time	Name of Surveyor * (\$60.5420a(b)(7)(iii))	Ambient Temp, Sky cond, Max Wind Speed	Monitoring Instrument Used * (\$60.5420a(b)(7)(v))	Deviations From Monitoring Plan	Type of Comp Fug Em Detected	Number of Each Comp Type Fug Em	Date of Successful Repair	Type of Instrument Used to Resurvey Repaired Components	Training and Experience of Surveyor * (\$60.5420a(b)(7)(iii))
1	TRIGGER FEDERAL 4176-16-21-1FH	11/10/2017	10:00 AM	11:00 AM	Shane Davis	40 F, Partly Cloudy, 17 mph	FLIR GF 320 camera	No	None	-	-	FLIR GF 320 Camera	1 year, FLIR company training
2	DICE FEDERAL 3976-8-5-1FH	8/16/17	11:00 AM	12:00 PM	Nic Haas, Shane Davis	69 F, Clear, 3 mph	FLIR GF 320 camera	No	PRV	1	8/16/2017	FLIR GF 320 Camera	2 year, FLIR company training
3	PADDYS IRISH FED 3976-26-25-1FH	11/21/17	11:30 AM	12:30 PM	Shane Davis	30 F, Partly Cloudy, 5 mph	FLIR GF 320 camera	No	None	-	-	FLIR GF 320 Camera	1 year, FLIR company training
4	CHICO FEDERAL 4075-29-32-1FH	11/9/17	2:15 PM	2:30 PM	Shane Davis	38 F, Partly Cloudy, 10 mph	FLIR GF 320 camera	No	None	-	-	FLIR GF 320 Camera	1 year, FLIR company training
5	ALAMO FED 3976-33-28-1FH	11/22/17	9:00 AM	10:30 AM	Shane Davis	46 F, Partly Cloudy, 10 mph	FLIR GF 320 camera	No	Thief Hatch	1	11/22/2017	FLIR GF 320 Camera	1 year, FLIR company training
6	MAGNOLIA FED 3875-28-33-1FH	11/22/17	3:45 PM	5:00 PM	Shane Davis	55 F, Partly Cloudy, 10 mph	FLIR GF 320 camera	No	None	-	-	-	1 year, FLIR company training
7	SORREL STATE 3875-21-16-1FH	11/22/17	3:45 PM	5:00 PM	Shane Davis	55 F, Partly Cloudy, 10 mph	FLIR GF 320 camera	No	None	-	-	FLIR GF 320 Camera	1 year, FLIR company training
8	CANNON FED 3876-1-12-1FH	11/22/17	12:30 PM	1:30 PM	Shane Davis	54 F, Partly Cloudy, 15 mph	FLIR GF 320 camera	No	None	-	-	-	1 year, FLIR company training
9	BUTTERMILK STATE 3976-15-22-1FH	11/21/17	8:30 AM	10:00 AM	Shane Davis	25 F, Overcast, 2 mph	FLIR GF 320 camera	No	Thief Hatch, Valve	1, 1	11/21/2017	FLIR GF 320 Camera	1 year, FLIR company training
10	BISCUIT STATE 3976-15-22-2FH	11/21/17	8:00 AM	10:00 AM	Shane Davis	25 F, Overcast, 2 mph	FLIR GF 320 camera	No	Thief Hatch	3	11/21/2017	FLIR GF 320 Camera	1 year, FLIR company training
11	GNEISS FED 4075-27-34-1SH	11/14/17	10:15 AM	11:15 AM	Shane Davis	50 F, Partly Cloudy, 15 mph	FLIR GF 320 camera	No	None	-	-	-	1 year, FLIR company training
12	GOLDEN SPIKE FED 4076-9-4-1SH	11/3/17	10:30 AM	12:30 PM	Shane Davis	28 F, Partly Cloudy, 2 mph	FLIR GF 320 camera	No	None	-	-	-	1 year, FLIR company training
13	ARMY MULE FED 3976-2-11-1FH	11/15/17	11:30 AM	1:00 PM	Shane Davis	38 F, Partly Cloudy, 10 mph	FLIR GF 320 camera	No	Thief Hatch	2	11/15/2017	FLIR GF 320 Camera	1 year, FLIR company training
15	HOOVER FED 3976-3-10-1FH	2/27/18	11:45 AM	2:20 PM	Jesse Sutphin/Dan Williams	33 F, Clear, 8 mph	FLIR GF 320 camera	No	None	-	-	FLIR GF 320 Camera	2 year, FLIR company training
16	SLURRY BOMBER FED 4076-34-27-1SH	2/27/18	11:45 AM	2:20 PM	Jesse Sutphin/Dan Williams	33 F, Clear, 8 mph	FLIR GF 320 camera	No	None	-	-	FLIR GF 320 Camera	2 year, FLIR company training
18	POWDER HOUND FED 3976-14-23-1SH	11/21/17	10:30 AM	12:00 PM	Shane Davis	25 F, Partly Cloudy, 5 mph	FLIR GF 320 camera	No	None	-	-	FLIR GF 320 Camera	1 year, FLIR company training



Katy Feb 18 15:22:15
02 Jan 2018, 15:46

(b) (9)

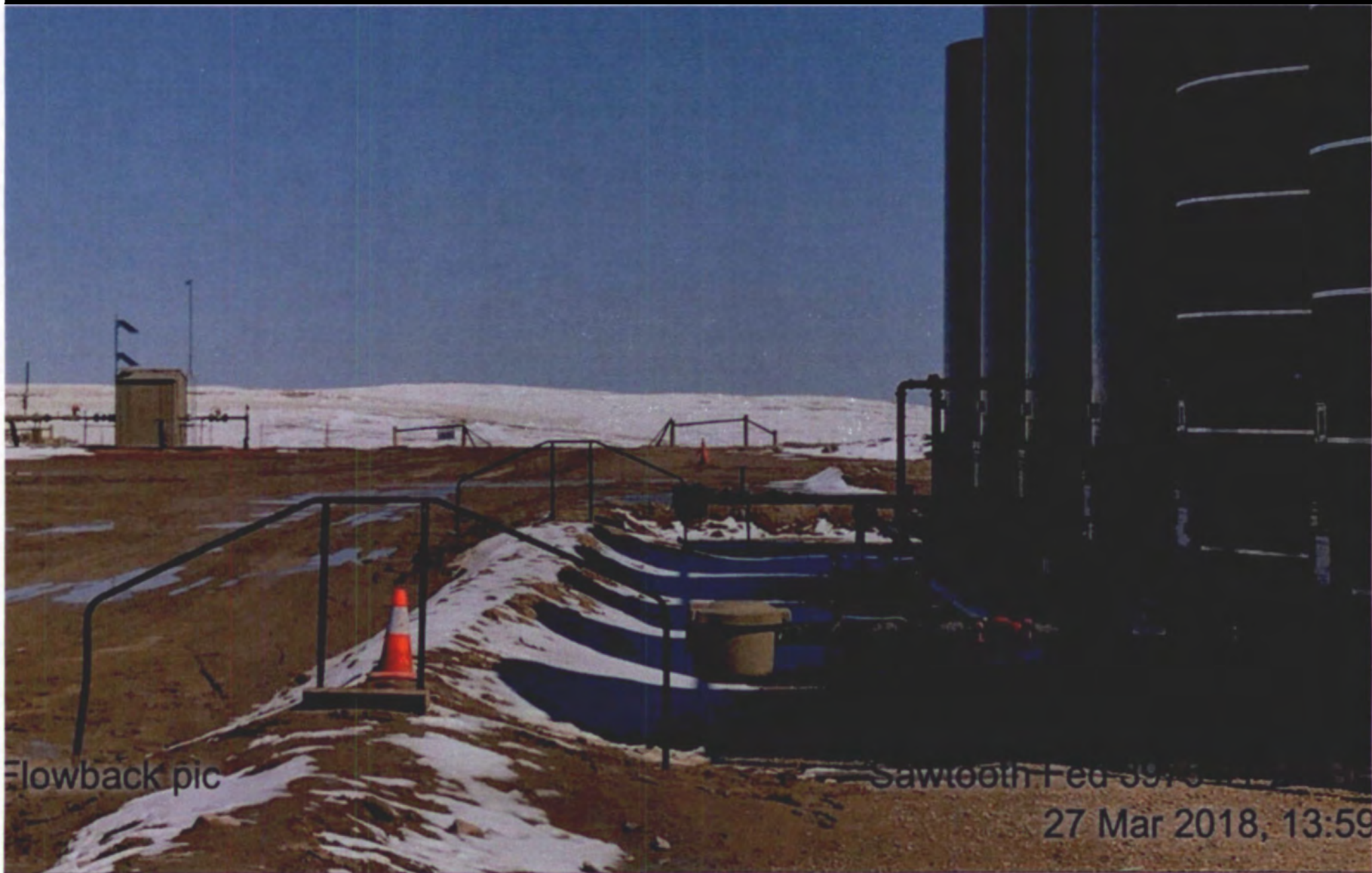


Hooper Fed 3976-3-10-1FH
08 Feb 2018, 13:22

(b) (9)



Slurry Bomber Fed
4076-34-27-1SH
08 Feb 2018, 13:22



Flowback pic

Sawtooth Fed 3973-11-2-01
27 Mar 2018, 13:59

Other Compliance Report CRPT034346

Katy Fed 3876-10-15-22-1FH

F027779

October 17, 2018

**Air Quality Division
Other Compliance Report**

Oct 17 2018, 14:44:32

Facility ID: F027779

Report ID: CRPT034346

Facility Name: Katy Fed 3876-10-15-22-1FH

Report Type: Other Compliance Reports

- Report Category

Category: Annual Monitoring
(Minor/SM)

- Description, Reporting Period and/or Date(s)

Enter the reporting period and due date if applicable. Also summarize the contents of the attached compliance report, including the test date, notification date, and any notable issues. Attach the compliance report below.

2018 NSPS Oa report for SM Energy from Aug 2, 2017 to March 28, 2018 with completion photos. Corrected version

- Attachments

Attachment ID	Description	Type
222099	2017-18 NSPS Oa SM Energy	One Time Report Attachment

- Additional Facilities

Facility ID	Facility Name	Operating Status	Facility Class	Facility Type	County	Lat/Long
F026609	Trigger Fed 4176-16-21 1FH	Operating	Minor	Production Site	Campbell	(b) (9)
F026611	Dice Fed 3976-8-5 1FH	Operating	Minor	Production Site	Converse	
F026689	Chico Fed 4075-29-32-1FH/ Spruce 29W17-2SH (prev Seeley	Operating	Minor	Production Site	Converse	
F026969	Magnolia Fed 3875-28-33- 1FH & Sorrel State 3875- 21-16-1	Operating	Minor	Production Site	Converse	
F026970	Alamo Fed 3976-33-28-1FH	Operating	Minor	Production Site	Converse	
F026971	Paddys Irish Fed 3976-26- 25-1FH	Operating	Minor	Production Site	Converse	

F027455	Cannon Fed 3876-1-12-1FH	Operating	Minor	Production Site	Converse	(b) (9)
F027495	Buttermilk Biscuit 3976	Operating	Minor	Production Site	Converse	
F027496	Army Mule Fed 3976-2-11-1FH	Operating	Minor	Production Site	Converse	
F027498	Gneiss Fed 4075-27-34-1SH	Operating	Minor	Production Site	Converse	
F027499	Slurry Bomber Fed / Hooper Fed PAD	Operating	Minor	Production Site	Converse	
F027731	Powder Hound Fed/Steamboat Fed PAD	Operating	Minor	Production Site	Converse	
F027821	Golden Spike Fed 4076-9-4-1SH	Not Yet Installed	Minor	Production Site	Converse	
F027951	Sawtooth Fed 3975-11-2-1SH/Aspen 11W23-1FH (prv Eddyout	Operating	Minor	Production Site	Converse	



CORPORATE AVIAN PROTECTION PLAN
SM ENERGY COMPANY

October 2, 2018

Revision 6

Project #: 08Y-005-005

SUBMITTED BY: Trihydro Corporation

1252 Commerce Drive, Laramie, WY 82070

ENGINEERING SOLUTIONS. ADVANCING BUSINESS.

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- C. U.S. FISH AND WILDLIFE SERVICE JUNE 14, 2018 DESTRUCTION AND RELOCATION OF MIGRATORY BIRD NEST CONTENTS MEMO AND FREQUENTLY ASKED QUESTIONS
- D. SITE INSPECTIONS AND BIRD CARE PROTOCOL, AVIAN PROTECTION PLAN, SM ENERGY COMPANY

List of Acronyms

APP	Avian Protection Plan
AST	aboveground storage tanks
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practice
ESA	Endangered Species Act
MBTA	Migratory Bird Treaty Act
SME	SM Energy Company
SPCC	Spill Prevention Control and Countermeasures
T&E	Threatened and Endangered
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

This Avian Protection Plan (APP) has been developed to assist SM Energy Company (SME) in protecting avian species with regard to U.S. Fish and Wildlife Service (USFWS) regulations. SME conducts oil and gas well drilling in two regions in Texas including the Permian and South Texas / Gulf Coast (Figures 1 and 2). This APP covers operations and activities within the SME Regions associated with:

- Oil and gas well drilling
- Oil and gas well completion
- Oil and gas well operations

This APP covers operations and activities in which SME exercises direct and/or supervisory control over its employees and contractors. Activities where SME has a royalty or working interest, or is not the designated operator, are outside of the scope of this APP.

1.1 PURPOSE

This plan provides technical guidance for managing avian protection at well sites within the SME Regions. This APP is designed to identify operational hazards to birds, engineering controls to manage site-related chemical and physical hazards to birds, and bird behavior that could increase the potential hazard (e.g., migration patterns and nesting). Additionally, this APP assists SME in minimizing bird incidents based on current knowledge of site operations and potential impacts to avian health.

1.2 COMPANY POLICY

This APP has been written to align with SME guiding principles and objectives. SME believes it is important to safeguard the environment and protect the health and safety of their employees wherever and whenever they conduct their business operations. This belief begins with the exploratory phase of their operations, and extends through all other phases, including the drilling and completion of wells, production operations, and finally, the sale of their product. SME seeks to affiliate with other businesses that recognize the importance of safeguarding the environment and protecting the health and safety of their employees and anyone else with whom they interact. In consideration of this global company policy, SME will use this APP to educate its employees and guide site activities. The goal of this educational program is to maximize avian protection required under the Migratory Bird Treaty Act (MBTA) and other applicable Federal regulations.

1.3 REGULATORY COMPLIANCE

The primary guiding regulation for this APP is the MBTA. According to the MBTA, it is illegal to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, (or) possess, any migratory bird...for the protection of migratory birds...or any part, nest, or egg of any such bird." (16 U.S.C. 703). MBTA compliance is an ongoing concern because migratory birds move annually through and within the SME regions. Raptors and breeding birds are included in this APP because they also move within and across the regions. In addition, this APP will cover compliance with other Federal regulations that protect avian species. These are the Endangered Species Act (ESA) and the Bald and Golden Eagle Protection Act (BGEPA). The ESA regulates federally protected Threatened and Endangered (T&E) bird species.

For any of these regulations, injured or oiled birds should not be removed or handled in any manner. To do so without permission may be in violation of associated laws and regulations. All bird incidents and observations (i.e. dead birds, living oiled or contaminated birds, sick birds, injured birds) need to be reported to SME's Bird Incident Control Operator, who will then contact the USFWS for cases involving live and/or injured migratory birds. Observations or incidents involving dead migratory birds resulting from incidental take (i.e. cases where take of migratory birds is not the purpose of an action) do not need to be reported to the USFWS per the December 22, 2017 Solicitor's Opinion M-37050 "The Migratory Bird Treaty Act Does Not Prohibit Incidental Take" (USDOJ 2017). Opinion M-37050 concludes that the MBTA's prohibitions on taking or killing only apply to affirmative actions that have as their purpose the taking or killing of migratory birds, their nests, or their eggs. Therefore, incidental take of migratory birds, nests, or eggs is not considered unlawful. However, possession of nests or bird parts, including deceased birds, is prohibited under the MBTA. USFWS guidance on the recent M-Opinion affecting the MBTA (USFWS 2018a) and Migratory Bird Nest Destruction and Memo (USFWS 2018b) are included in Appendix B and C, respectively. Any incidents involving an injured or deceased eagle or T&E species must be reported to the USFWS. The BGEPA prohibits the incidental take of eagles including disruption of breeding activities and possession of eagle feathers or other parts without a permit.

This APP is written to address avian protection issues outlined in the April 9, 2010 correspondence from the U.S. Department of Justice (DOJ 2010). This document addresses risk-reduction measures such as best management practices (BMPs) and provides deterrent methods to minimize contact with site stressors, such as oil and hazardous site-related chemicals.

1.4 TRAINING

Training is a critical element of an APP. Training will cover the following components:

- Need for the APP at SME oil and gas exploration and production facilities

- Proper inspections to ensure compliance with the APP
- Protocols for reporting avian mortality or injury
- BMPs to prevent bird mortality or injury at oil and gas exploration and production facilities

Training will be provided to new personnel to ensure that new employees and contractors are trained. An annual refresher will be required for previously trained staff.

2.0 AVIAN PROTECTION AND OVERVIEW

There are several factors to consider when evaluating the potential for avian incidents. Among them is understanding where and when these incidents are most likely to occur. Often, avian incidents are less likely to occur during the actual drilling process because there is extensive human and mechanical disturbance.

2.1 FACTORS CONTRIBUTING TO BIRD INCIDENTS

Following well drilling, completion and equipment (e.g., drilling rig) removal from the well pad, the open pit may attract birds. In order to predict potential risks to migratory birds, the following information should be identified at each SME location:

- Identification of high bird use areas
- The construction by birds of nests on oil and gas facility equipment, such as tank batteries
- Existence of adjacent wetlands
- Visual indication of prey populations that may attract raptors to the facilities (e.g., prairie dog towns)
- Perch availability
- Effectiveness of existing APP procedures
- Any other factors that can increase bird interactions with oil and gas facilities

Birds may mistake open reserve pits for natural surface water features and attempt to utilize them for drinking, resting, and feeding. Birds are attracted to invertebrates in reserve pit fluids and in secondary containment around chemical tanks. Any residual oil on the open pit or in secondary containment could coat a birds' feathers, which could lead to hypothermia, starvation, dehydration, exhaustion, and death. Open pits offer only a limited attraction for waterfowl and other migratory birds due to human presence, ongoing activity, and noise. However, this statement may not be true when other nearby water sources are absent, thus making the available pit attractive to migrating or nesting birds. The longer an unprotected pit containing drilling fluids is left open on site, the greater the probability that birds will utilize the pit. Other factors that can contribute to bird incidents include entrapment within buildings or asphyxiation from flare off-gassing.

This APP includes activities in the South Texas/Gulf Coast and Permian regions of Texas. The Texas protocol is provided in Appendix A of this APP. The following Texas regulations apply for managing pits associated with oil and gas development:

- The drilling operator is required to skim oil from the top of a pit, and if the operator does not comply within 12 months, the operator must net the pit.
- An operator must screen, net, cover, or otherwise render harmless to birds open-top storage tanks that are greater than eight feet in diameter and contain a continuous or frequent surface film or accumulation of oil, skimming pits, and collecting pits that are used in skimming pits.

2.1.1 MIGRATION

Seasonal migratory patterns should be considered when evaluating the appropriate avian-protection measures. Migratory periods typically occur in spring and fall. Migration introduces the potential for many waterfowl and other migratory avian species to be moving and searching for water bodies on which to rest, drink, and feed. Figures 1 and 2 present a generalized overview of major migratory routes within the SME regions relative to existing development operations. These routes are used by ducks, geese, and other migratory birds (Lincoln et al. 1998).

There are latitudinal movements of birds throughout the year. Some species begin fall migration in early August while others do not move until winter. Some species do not migrate until lack of food or severe weather triggers movement (Lincoln et al. 1998). The migratory period varies by weather and year.

2.1.2 NESTING BIRDS

Nesting and breeding activities should also be considered when evaluating the appropriate avian-protection measures to be implemented on SME properties. Direct and purposeful actions that result in the destruction or removal of an active migratory bird nest or eggs are considered a "take" under the MBTA. Take of migratory birds, nests, or eggs is not considered unlawful in cases where the take is not the purpose of or is incidental to the activity. Note that this applies to migratory songbirds, waterfowl, shorebirds, or raptors. However, some unoccupied nests are legally protected by statutes other than the MBTA, including nests of threatened and endangered migratory bird species and bald and golden eagles, within certain parameters.

Where operations intersect with areas identified as important to birds, greater care should be used to identify active nests. Oiled birds can carry oil on their feathers back to the nest, where contact of the oiled feathers can harm the egg. Therefore, care should be given during the nesting season to minimize oil exposure pathways. Where possible, avoid disturbing any active bird nest on the ground, in or on a man-made structure, and in or on a natural feature such as a

shrub or tree. If activities are to be conducted near an active migratory bird nest, the USFWS recommends contacting the local USFWS Ecological Services or Regional Migratory Birds office to discuss voluntary best practices that may minimize impacts to nesting birds (USFWS 2018b) (Appendix C).

Depending on the species, nesting begins in late February in the South Texas / Gulf Coast and Permian regions (Kast et al. 1998). Eggs are typically found in the nests beginning in March, and nesting continues throughout the summer until mid-July or August (Kast et al. 1998). Nesting periods depend on the location, elevation, and species present.

3.0 OPERATIONS

This section describes the potential operational hazards to birds present at the SME regional well locations. The hazards were identified based on site visits and ongoing discussions with SME personnel. Avian-protection measures are discussed in Section 4.0.

3.1 SITE-RELATED CHEMICAL AND PHYSICAL HAZARDS

The presence and concentration of chemicals, as well as physical hazards, were evaluated when developing this APP. There are many potential site-related chemical and physical hazards that may be present during oil and gas development and operations (Table 1). Drilling fluids or drilling muds consist of a base fluid that may contain water, diesel, mineral oil, or a synthetic compound. They also contain weighting agents (typically barium sulfate, barite, or hematite) and bentonite clay to increase viscosity and line the borehole walls. Iron oxide, aluminum bisulfate, zinc carbonate, and zinc chromate are used as corrosion inhibitors (Occupational Safety and Health Administration [OSHA 2010]). Drilling fluids may also contain dispersants including lignosulfonates and lignites, which keep the mud in a fluid state (OSHA 2010). Surfactants (e.g., fatty acids and soaps) are used to defoam and emulsify the mud. Biocides, consisting of organic amines, chlorophenols, and formaldehydes, are used to kill bacteria and reduce souring of drilling mud.

Listed below are the different types of drilling fluids that may be used depending on conditions encountered (OSHA 2010).

- Water-based muds:
 - Water-based muds are typically used by SME due to their lower environmental impact and cost.
- Non-aqueous fluids:
 - Oil-based fluids are used in wells where drilling is more difficult and water-based muds do not perform as well such as deep wells, horizontal and extended-reach wells, and wells drilled in reactive shales (USFWS 2009). Oil-based fluids can contain crude oil, diesel, and mineral oils, and can have aromatics ranging from 0.5 to 35 percent (International Petroleum Industry Environmental Conservation Association/ International Association of Oil & Gas Producers [IPIECA/OGP] 2009).
 - Synthetic-based fluids, also known as Group III fluids (low/negligible-aromatic content fluids), use non-aqueous oil-based non-petroleum fluids as their base, and include various types of hydrocarbons such as olefins, ethers, vegetable esters, linear alkylbenzenes, and synthetic paraffins (OSHA 2010). Synthetic-based muds have drilling properties similar to those of oil-based fluids but do not have polynuclear aromatic

hydrocarbons (PAHs), are less toxic, biodegrade faster, and have a lower bioaccumulation potential (USFWS 2009). Synthetic fluids have <0.5% total aromatics and <0.001% PAHs (IPIECA/OGP 2009).

When the reserve pit contains petroleum hydrocarbons, the risk of bird mortality is elevated (USFWS 2009). Other compounds that may be harmful to birds include surfactants, hydrochloric acid, caustic soda (sodium hydroxide), and salts. Oil, diesel, and high brine concentrations that coat feathers are considered an acute (immediate) hazard. Other chemicals in the fluids may cause either acute or chronic hazards to birds that utilize the pits as a drinking water source. Table 2 presents a summary of potential chemical hazards of major components in drilling fluids.

General water quality for SME pit waters is anticipated to vary based on the chemistry of geologic formations encountered during drilling, as well as by pit type. Because pit waters can pose an acute and/or chronic risk to birds, the protective measures described within this APP will be implemented, if necessary.

3.2 RESERVE PITS

Reserve pits are excavated areas adjacent to drill rigs, which are utilized for the storage, and in some states, disposal of well cuttings and drilling fluid. Pit contents are dependent on the type of drilling fluids used, geologic formations encountered, and chemicals added during the drilling process. Pit contents, including oil and chemicals, can be detrimental to bird health.

SME's reserve pits are typically uncovered and therefore available for contact by birds during the 10- to 60-day drilling and completion operation. Reserve pit materials are typically dewatered within 30 days and closed within 90 days of finalizing drilling and completion activities, but the process may take up to one year. Minimizing the time that the pits are active and contain fluids reduces the potential for avian hazards. If the presence of oil or evidence of toxicants within the water is observed, engineering controls should be implemented as soon as possible to reduce the potential for injury to avian species.

When high levels of human activity are present, additional mitigation measures may not be necessary. As stated in Section 2, there is extensive human activity during the actual drilling process, and open pits may offer only a limited attraction for waterfowl and other migratory birds due to human presence and noise. During drilling, noise levels can exceed 85 decibel (dB) near the drill rig. Observations of active drill sites at different SME operations suggests that avian activity on an active drill pad is minimal. However, not all species may be deterred by human activity. If the drill site is in an area of high bird activity, bird-protection devices and BMPs should be employed to avoid impacting birds. A more detailed discussion of the impact of human activity is presented in Section 4 of this APP.

3.3 CLOSED-LOOP DRILLING

An alternative to the use of open, earthen reserve pits is a closed-loop drilling system comprised of steel tanks to hold the drilling muds and cuttings. Closed-loop drilling utilizes equipment to physically separate the drilling fluids from the cuttings. The drilling fluids are recycled in the steel tanks, and the cuttings are dried prior to disposal. Closed-loop systems may require an emergency discharge pit to contain unplanned releases. SME has initiated closed-loop drilling practices when the use of a reserve pit is not a viable option. If the presence of oil or evidence of toxicants within the water in an emergency discharge pit is observed, and the water cannot be immediately removed, engineering controls should be considered to reduce the potential for injury to avian species.

3.4 FLARE STACKS AND PITS

SME uses flare stacks to incinerate waste gases, primarily methane and hydrogen sulfide, produced from the wells. Earthen flare pits are constructed below the flare stacks to contain inadvertent liquid releases. If the presence of oil or evidence of toxicants within water in these flare pits is observed, and the water cannot be immediately removed, engineering controls should be considered to reduce the potential for injury to avian species. Flare stacks may be used by birds for perching or roosting, which could cause injury or death to birds due to incineration or inhalation of gases. Devices to minimize the potential for perching on the flare stacks, as well as protection on the flare pit, should be installed. Active flare stacks that run continuously would not attract birds; such stacks would require engineering controls only if high bird activity was noted in the area and there were devices birds could use for perching near the stack. This would protect birds in the event of a sudden increase in the flare volume/size.

3.5 FLOWBACK WATER PITS

Hydraulic fracturing is used to enhance permeability within a formation to stimulate production of oil or gas. The fracturing process includes pumping fluids (99 percent water) at a high pressure to cause the formation to fracture. When the fracturing is complete, pressure is released and the fracturing fluid and formation gas and liquids are allowed to flow back to the surface, with the water flowing into frac tanks. The flowback water may then be placed into a lined surface impoundment. Flowback water may be toxic to avian species due to high levels of salinity, surfactants, petroleum hydrocarbons, or other harmful chemicals. If the presence of oil or evidence of toxicants within the water is observed, engineering controls should be considered to reduce the potential for injury to avian species.

3.6 PRODUCED WATER PITS

Oil and gas production operations often produce water along with the hydrocarbons. Produced water can range from slightly brackish to brine and can contain salt, hydrocarbons, and residual volumes of well-stimulation chemicals that may be toxic to avian species. Additionally, inefficient separation of oil from the produced water can result in oil or

sheens in the produced water. Storage of produced water in open pits or open-topped tanks can pose a risk to birds if it contains oil, sheens, or harmful quantities of well-stimulation chemicals. The produced water may be pumped into earthen pits or above ground steel tanks. If the presence of oil or evidence of toxicants within the water is observed, engineering controls should be considered to reduce the potential for injury to avian species.

3.7 FRESHWATER FRAC PONDS AND SOURCE WATER PITS

Freshwater frac ponds are used to store surficial runoff from precipitation events for use in the drilling and/or fracturing process. These large ponds are usually lined and are generally open year-round to store the water until it is needed. Water captured from surface runoff is considered non-toxic to avian species. Source water pits are used to store surface water or groundwater that is pumped from water supply wells for use in the drilling and/or fracturing process. These large pits are usually lined and are generally open year-round to store the water until it is needed. Water recovered from the wells is considered non-toxic to avian species because it has not been utilized for site activities, but it could naturally be saline or contain heavy metals and/or other elements present in the geologic formation. If the presence of oil or evidence of toxicants within the water is observed, engineering controls should be considered to reduce the potential for injury to avian species.

3.8 SECONDARY CONTAINMENT FOR ABOVEGROUND STORAGE TANKS AND DRUMS

Secondary containment for aboveground storage tanks (AST), both in- and out-of-service, generally consists of earthen berms. In addition, 55-gallon drums stored on-site may also have secondary containment generally consisting of plastic or metal catch basins. These secondary containment structures collect liquid associated with spillage or seepage from the tanks or drums, and precipitation. The liquid within these secondary containment structures could negatively impact birds if it contains oil or other chemicals, or the birds could become trapped and drown. If the presence of oil or evidence of toxicants within the water is observed, and the water cannot be immediately removed, engineering controls should be considered to reduce the potential for injury to avian species.

The secondary containments for small chemical/fuel tanks/totes at the SME production facilities have been found to be a primary hazard to birds from operations. It is critical that these secondary containment structures are kept clean, dry, and/or protected such that birds cannot enter them.

3.9 ON-SITE BUILDINGS OR EQUIPMENT

Birds typically enter building openings (e.g. vents) or cavities such as those at the base of some oil-water separators to nest. They can become entrapped in buildings and die due to stress or heat exhaustion. Nests could be in the way of maintenance activities, and also encourage birds to remain on the site where they are inherently at a higher risk of

exposure to site activities than in their natural habitat. Exclusion engineering controls should be incorporated to prevent birds from entering buildings or holes/cavities in equipment in cases of high bird activity or use.

3.10 POWERLINE CONNECTIONS TO METER BOXES

Avian species are subject to electrocution or collision with power lines, which could result in injury or death. SME is not responsible for maintaining power lines in all regions. However, at some locations the power line is the responsibility of SME. In addition, the feeder line that connects the meter boxes to the power lines is the responsibility of SME. Any power lines that are SME's responsibility should be protected with permanent devices to minimize the potential for birds to land or perch, if the possibility of shock exists.

3.11 LEAKS AND SPILLS

Small drips and spills may occur as a result of site-related activities. Small puddles of oil or other chemicals may result from faulty hose or pipe connections, leaking equipment, or leaking valves. Puddles of oily fluid may potentially attract and entrap small songbirds and other avian species. Migratory birds may ingest puddles of oily liquids and be adversely affected. Monitoring should include looking for drips, leaks, and spills. Small leaks, drips, and spills should be contained and leaking equipment and valves should be promptly repaired.

4.0 AVIAN-PROTECTION MEASURES

Avian species that migrate through and nest within the SME regions should be protected from hazards that could cause injury and/or death. The types of protection measures include engineering controls and open pit protection measures, as discussed in the following sections. A summary of the recommended protections for each of the operations is provided in Table 3.

4.1 ENGINEERING CONTROLS

Engineering controls are used to remove a hazard or place a barrier between the birds and the hazard. Well-designed engineering controls can be highly effective in protecting birds, and will typically be independent of operations to avoid compromising operations or worker safety while providing a high level of avian protection. State regulations pertaining to reserve pits for the two regions that SME operates are included as Appendix A.

4.1.1 EXCLUSION

Exclusion devices are constructed to create a physical barrier to the hazard and thereby eliminate the potential of birds coming in contact with the potential hazard. Common forms of exclusion devices include:

4.1.1.1 NETTING

Netting provides a barrier between the avian species and the open water that could potentially contain hazardous chemicals. The netting is usually composed of a nylon or wire material that is woven together to inhibit bird species to access the water below.

4.1.1.2 FENCING

In addition to netting, some states require additional fencing surrounding open water pits to exclude birds from accessing the water. The specific requirements for each state, by SME region, are presented in Appendix A.

4.1.1.3 BIRD BALLS

Bird balls are hollow, plastic floating balls that camouflage the water surface and prevent birds from landing on or drinking the pit water. By placing a sufficient quantity of hollow plastic balls onto the liquid surface, the bird ball blankets automatically arrange themselves into a close-packed formation over the water surface. This high surface coverage provides an extremely effective barrier to birds. The standard practice is to completely cover the fluid surface and continue with bird balls up the sides of the pits to allow additional coverage in case of a rise in the fluid level,

which could result from a heavy rain or melted snow. For areas with high winds, weighted bird balls should be used to prevent the balls from being blown off the pond or pit surface.

4.1.2 ANTI-PERCHING AND ANTI-COLLISION DEVICES

Devices are available to reduce the likelihood of birds perching in areas where a potential hazard exists. A few of these devices are identified below:

- Anti-perching wire consists of nylon-coated stainless steel with a diameter that is too small for most birds to grip. The wires are attached by tension springs to either horizontal or vertical posts. The springs cause the wires to 'bounce' when birds try to land on them; therefore, disorienting the bird and subsequently discouraging them from landing at that particular site.
- Anti-perching spikes are designed to prevent birds from landing on surfaces. The spikes cause unpleasant sitting conditions for the birds, deterring perching in that particular location.

4.1.3 ESCAPE RAMPS

Escape ramps can help protect birds from drowning in steep sided pits or secondary containment tanks. A few types of escape ramps are identified below:

- Escape ramps placed on each side of the pit allow the bird to escape from potential drowning. The ramps consist of a high-traction surface that allows birds to walk out of the pit.
- Ladders, placed at several locations along the pit wall, aid in the prevention of drowning and allow an entrapped bird to escape. The ladders are sloped at a 30 to 40 degree angle and intercept the line of travel within a pit.

4.2 OPEN PIT PROTECTION MEASURES

Open pits warrant protection when they contain fluids that are potentially hazardous to birds. The most effective protective measure for birds at drill sites is to prevent oil spills and prevent oil or other hazardous materials from entering open pits or open-topped tanks. When oil or other hazardous materials do enter open pits or open-topped tanks, the preferred options include either the immediate removal of such fluids, or netting the pits/tanks. However, situations may exist such that spills and leaks occur at an operating facility, but remediation cannot be performed due to adverse weather or safety conditions. For example, covering tanks or pits that are in use might introduce a safety hazard. A short-term option, such as use of visual hazing deterrents, may be necessary in some circumstances. Visual hazing deterrents may be effective with migratory birds, but are less effective over longer time periods with resident birds. Resident birds become acclimated to an object or other visual stimulus in 3 to 5 days (Gorenzel and Salmon

2008). Thus, visual deterrents, such as flagging, would be ineffective in a reserve pit left open and in place for several weeks or months as allowed by state regulations. Therefore, supplemental techniques or alternate devices may also be necessary for effective hazing over longer time periods. Temporary protection measures are discussed in the following sections.

4.2.1 HAZING

Hazing is an effective measure for temporary open pit protection and is best applied during active migration. Because resident or nesting birds can rapidly acclimate to hazing techniques, this method should be used primarily as a deterrent for migrating birds. Use of multiple hazing methods may be more successful than a single technique. Hazing techniques that can be used prior to netting are as described below.

4.2.1.1 NOISE

There are numerous noise deterrents commercially available (Gorenzel and Salmon 2008). Common devices available from pest control suppliers include:

- **Broadcast Calls** – these include predator calls and distress calls. Broadcast calls are effective day or night, and there is slower habituation compared to other auditory or visual hazing techniques. The broadcasts are effective at low sound levels and therefore may be less disturbing to nearby residents than other auditory methods. The limitations are that they are species-specific, not all species give alarm or distress calls, and recordings for many species are not available. Therefore, broadcast calls would not necessarily deter all birds.
- **Propane Cannons** – these devices make a loud booming noise at pre-determined intervals. They must be resupplied with propane and sheltered from the wind to work. To prevent birds from becoming accustomed to the noise, these devices should be moved frequently and are thus somewhat labor intensive. Although propane cannons are effective day and night, periodic cannon blasts may provoke complaints from nearby landowners and residents and also present a potential fire hazard.
- **Pyrotechnics** – these include bird bombs, screamers, shell crackers, and rockets. They are typically shot from a pistol or shotgun. They should be considered a potential ignition source, and thus they are not recommended for use where there is flammable vegetation or other materials. They require ear and eye protection for personnel using them.

4.2.1.2 VISUAL HAZING

Visual hazing includes the following techniques (Gorenzel and Salmon 2008):

- Mylar® tape or flagging – Mylar® tape, silver on one side and red on the other, is available in rolls of various widths. Flagging consists of sheets of plastic attached to a lath or a wire. It can be installed over a reserve or fracturing pit. Although it is inexpensive, readily available, portable, and easily deployed, the flagging is not as effective at night or during windless conditions.
- Lasers – Some species have shown extreme avoidance to laser beams in field trials. Because lasers are effective at night and are silent, they are good for locations where noise would be a disadvantage or disruptive to adjacent property owners. However, lasers may not be effective during the day, they are relatively expensive, and a human operator is required. As a safety precaution, the potential for lasers to act as ignition sources should be evaluated if this option is considered.
- Balloons – Balloons with a reflective coating can startle birds. Balloons are also available with eye spots that may deter birds. Balloons deflate after a few days, can tear apart in wind with speeds greater than 15 miles per hour, and are not effective at night. However, they are readily available and inexpensive.
- Lights – Lights that flash and rotate may deter bird use and are relatively inexpensive. However, lights require a battery and are not effective during the day. As a safety precaution, the potential for battery-operated lights to act as ignition sources should be evaluated if this option is considered.
- Scarecrows – These can be human effigies that mimic a human, plastic predatory birds, or other animals. Mechanical pop-up scarecrows are available that inflate periodically, are illuminated at night, and produce a siren-like noise. Scarecrows are not effective at night unless illuminated, and birds habituate rapidly to a non-moving scarecrow. These devices must be moved frequently, and some may be time-consuming to construct and install. As a safety precaution, the potential for illuminated parts to act as ignition sources should be evaluated if this option is considered.

4.2.1.3 GENERAL DISTURBANCE

High levels of human activity can deter birds from landing. Driving through the area in a truck or on an all-terrain vehicle can serve as a deterrent (Gorenzel and Salmon 2008). Walking can also serve as an avian deterrent. This mitigation method is more apt to be effective when other nearby water sources are present for birds to use.

As previously stated, during the drilling and completion process, there is extensive human activity (i.e. drill rigs, generators, truck traffic, etc.). Because of this, open pits offer only a limited attraction for waterfowl and other migratory birds. However, not all species may be deterred by human activity. If the drill site is in an area of high bird

activity, additional bird-protection devices and BMPs should be employed to avoid impacting birds. Selection of appropriate devices must consider site conditions to ensure that they are effective, and also not impair worker safety. Where other nearby water sources are absent, open pits present a stronger attraction, and disturbance may not be effective and additional mitigation measures may be required.

5.0 MIGRATORY BIRD TREATY ACT REPORTING REQUIREMENTS

Training is an important element of the APP and for maintaining MBTA compliance. SME will incorporate MBTA awareness and APP obligations into training required for personnel involved in the operations and locations covered under this APP. Appropriate personnel will be properly trained in avian issues identified in this APP. Appendix D contains the proper protocol to follow during site inspections for birds and recovery of live birds or carcasses. It also contains a Site Inspection Checklist to be used by SME personnel. Supplemental training will be conducted as appropriate when there are substantial changes in regulations or internal policies. Training will be required of all newly hired field personnel, as well as annual refreshers. Training will cover the reasons that the APP is required, protocols for reporting avian mortality, and BMPs to prevent migratory bird mortality at oil and gas exploration and production facilities. Training will not be limited to a single session, but will be conducted annually to ensure that new employees and contractors are trained, and previously trained staff is given a refresher.

If an active nest is found where site operations are going to take place, notify the SME Bird Incident Control Operator. The Bird Incident Control Operator will act as the primary contact on a region-by-region basis for avian issues and will notify the USFWS Office of Law Enforcement for assistance, where applicable. Appropriate notification procedures are outlined in Appendix D and regional contact information is presented on Table 4. If a migratory bird carcass or an oiled or otherwise injured bird is found onsite, the SME Bird Incident Control Operator must be notified immediately. For incidents involving eagles and T&E birds (live or deceased), or sick or injured migratory birds, the Bird Incident Control Operator will then call the USFWS Office of Law Enforcement Special Agent for their region (Table 4). This is the appropriate and legal procedure required by the USFWS. Deceased migratory birds do not need to be reported to USFWS in cases of incidental take, which is not explicitly prohibited under the MBTA. Birds should not be moved or nests disturbed until the appropriate contacts have been made and the SME Bird Incident Control Officer has provided instruction as to the appropriate procedure for the situation.

The APP should be reviewed annually by the parties involved in maintaining compliance with the MBTA. The review will address the APP effectiveness and any changes needed to improve its effectiveness. As part of this review, the records collected for bird incidents at various operations throughout the year will be examined to determine the effectiveness of bird protective measures and BMPs in preventing avian mortality and morbidity. This will act as a quality control check on the APP procedures. APP changes will be made in a consistent manner to maintain MBTA compliance.

6.0 REQUIREMENTS FOR OTHER FEDERAL AVIAN PROTECTION REGULATIONS

The ESA and the BGEPA are the two other federal laws besides the MBTA that protect avian species. The ESA protects federal T&E species from “take”, which is defined as any activity which may harm, harass, pursue, hunt, shoot, wound, kill, trap, capture, or collect birds. The level of protection for avian species varies by state. A list of T&E species within each state may be viewed at:

- <http://www.fws.gov/endangered/map/index.html>

The USFWS can be contacted for information pertaining to these special status species within each USFWS region. The regions may be identified, and contact information obtained at:

- <http://www.fws.gov/endangered/regions/index.html>

The ESA is most likely to apply prior to, or during, permitting or construction operations, and not during day to day operations, at existing facilities. By definition, these are not common species found in the environment. Therefore, the likelihood of encountering a T&E species is rare. SME staff should be trained in how to identify T&E species endemic to the project location. Despite the low likelihood that a T&E species will be present at an SME facility, it is possible that a special status species could be injured or killed onsite. Dead or injured T&E birds should not be approached, handled, or removed from the site. Any potential T&E bird species found dead or injured within the boundaries of the site should be reported to the SME Bird Incident Control Operator, who can then contact the USFWS for further instruction.

The BGEPA prohibits taking, possessing, or transporting a bald eagle or golden eagle. It also prohibits taking, possessing, or transporting any of the eagle’s parts, nests, or eggs without prior authorization. This includes inactive nests as well as active nests. Take means to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb. Any activities that directly or indirectly lead to take are prohibited without a permit. This act allows for certain activities such as scientific study and Native American religious purposes. This act defines a “non-purposeful take,” which is an unintentional take that results from an otherwise lawful activity. The following actions are applicable under the BGEPA:

- Do not touch or otherwise attempt to handle a dead eagle.
- Do not harass a living eagle or disturb an eagle nest.

- If a dead eagle is found within the boundaries of a project site, or a bald or golden eagle is observed nesting or roosting near a project site, the SME Bird Incident Control Operator should be contacted.
- For a new project near an eagle nest, or if a nest is being built at an existing project site, the SME Bird Incident Control Operator may apply for a non-purposeful take.
- If project activities may disturb roosting or foraging eagles, the Bird Incident Control Operator will contact the local USFWS for advice and recommendations for how to avoid such disturbance and whether a permit is necessary.

For More Information

Questions about the Permit to Non-Purposefully Take Bald Eagles or the permit process, or for questions about Bald and Golden Eagle permits, should be directed to the local USFWS contact person for further instruction (<http://www.fws.gov/midwest/MidwestBird/EaglePermits/contactus.html>). Other than the Permit for the Non-Purposeful Take of Bald Eagles and the Permit to Remove or Relocate and Eagle Nest, the following office should be contacted for additional information:

Migratory Birds Permit Office
U.S. Fish and Wildlife Service
5600 American Blvd. West, Suite 990
Bloomington, MN 55437-1458
Phone: (612) 713-5436

7.0 REFERENCES

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TABLES

TABLE 1. SUMMARY OF POTENTIAL BIRD HAZARDS DUE TO SITE OPERATIONS
AVIAN PROTECTION PLAN
SM ENERGY COMPANY

Operation Type	Concern	Exposure Scenario	Typical Wastes	Birds Likely to Be Affected
Reserve Pit	Liquids, Entrapment, Toxicity	Birds are attracted to water and will attempt to land. For waterfowl, this is more likely during periods of peak migration, and where operations occur near major migration corridors. However, waterfowl or other migratory birds may also be found far from migration corridors or during periods when migration is not expected. Passerines may utilize the pit for a source of drinking water. Constituents in water at concentrations likely to be toxic, or constituents that produce an immediate physical hazard such as hypersaline water or oily waste, may trigger a bird incident by killing or injuring the bird.	Oil	Waterfowl
			Brine	Waterfowl
			Other chemicals (Barium, detergents, emulsifiers)	Waterfowl
				Passerines (Songbirds)
Flare Stacks and Pits	Liquids, Incineration	Flare pits may collect rainwater and snowmelt. Birds may roost on flare pits. Birds are attracted to water and will attempt to land. This is more likely to affect waterfowl during periods of peak migration, and where operations occur near major migration corridors. However, waterfowl or other migratory birds may also be found far from migration corridors or during periods when migration is not expected. Nesting birds could use equipment on which to construct a nest, or territorial displays. A flare could incinerate individuals in the nearby area.	Oil	Raptors (owls, hawks, falcons, eagles)
			Gas Condensate	Waterfowl
				Passerines (songbirds)
				Raptors (owls, hawks, falcons, eagles)
Freshwater Flowback Pits	Liquids, Incineration	Birds are attracted to water and will attempt to land. For waterfowl, this is more likely during periods of peak migration, and where operations occur near major migration corridors. However, waterfowl or other migratory birds may also be found far from migration corridors or during periods when migration is not expected. Passerines may utilize the pit for a source of drinking water. Constituents in water at concentrations likely to be toxic, or constituents that produce an immediate physical hazard such as hypersaline water or oily waste, may trigger a bird incident by killing or injuring the bird.	Oil	Raptors (owls, hawks, falcons, eagles)
			Gas Condensate	Waterfowl
				Passerines (songbirds)
				Raptors (owls, hawks, falcons, eagles)
Freshwater Frac Ponds	Liquids, Entrapment, Toxicity	Birds are attracted to water and will attempt to land. For waterfowl, this is more likely during periods of peak migration, and where operations occur near major migration corridors. However, waterfowl or other migratory birds may also be found far from migration corridors or during periods when migration is not expected. Passerines may utilize the tank for a source of drinking water. Constituents in water at concentrations likely to be toxic, or constituents that produce an immediate physical hazard such as hypersaline water or oily waste, may trigger a bird incident by killing or injuring the bird.	Oil	Waterfowl
			Brine	Waterfowl
			Other chemicals (Barium, detergents, emulsifiers)	Waterfowl
				Passerines (songbirds)

TABLE 1. SUMMARY OF POTENTIAL BIRD HAZARDS DUE TO SITE OPERATIONS
AVIAN PROTECTION PLAN
SM ENERGY COMPANY

Operation Type	Concern	Exposure Scenario	Typical Wastes	Birds Likely to Be Affected
Open Tanks	Liquids, Entrapment, Toxicity	Birds are attracted to water and will attempt to land. For waterfowl, this is more likely during periods of peak migration, and where operations occur near major migration corridors. However, waterfowl or other migratory birds may also be found far from migration corridors or during periods when migration is not expected. Passerines may utilize the tank for a source of drinking water. Constituents in water at concentrations likely to be toxic, or constituents that produce an immediate physical hazard such as hypersaline water or oily waste, may trigger a bird incident by killing or injuring the bird.	Oil	Waterfowl
			Brine	Waterfowl
			Other chemicals (Barium, detergents, emulsifiers)	Waterfowl Passerines
Freshwater Pits	Liquids, Entrapment, Toxicity	Birds are attracted to water and will attempt to land. For waterfowl, this is more likely during periods of peak migration, and where operations occur near major migration corridors. However, waterfowl or other migratory birds may also be found far from migration corridors or during periods when migration is not expected. Passerines may utilize the tank for a source of drinking water. Constituents in water at concentrations likely to be toxic, or constituents that produce an immediate physical hazard such as hypersaline water or oily waste, may trigger a bird incident by killing or injuring the bird.	Oil	Waterfowl
			Brine	Waterfowl
			Other chemicals (Barium, detergents, emulsifiers)	Waterfowl Passerines (songbirds)
Bermed Areas	Liquids, Entrapment, Toxicity	Bermed areas can contain a spill, or collect precipitation that combines with residual chemicals in soil or from spills/leaks/other releases. Birds are attracted to water and will attempt to land. For waterfowl, this is more likely during periods of peak migration, and where operations occur near major migration corridors. However, waterfowl or other migratory birds may also be found far from migration corridors or during periods when migration is not expected. Passerines may utilize the bermed area for a source of drinking water. Constituents in water at concentrations likely to be toxic, or constituents that produce an immediate physical hazard such as hypersaline water or oily waste, may trigger a bird incident by killing or injuring the bird.	Oil	Waterfowl
			Brine	Waterfowl
			Other chemicals (Barium, detergents, emulsifiers)	Waterfowl Passerines - (perching birds or songbirds)

Note:

NA - Not Applicable

TABLE 2. SUMMARY OF POTENTIAL CHEMICAL HAZARDS OF MAJOR COMPONENTS IN DRILLING FLUIDS
AVIAN PROTECTION PLAN
SM ENERGY COMPANY

Category	Chemical Names	Potential Avian Hazard	Likely Avian Route of Entry	Target Organ	General Toxicological Data	Source
Surfactants	Various names	Feathers – reduces insulating properties, water repellency	Direct contact	Exposure may result in hypothermia, lack of buoyancy	Low toxicity. Skin, eye, respiratory irritants.	USFWS, 2009
Sheen	Various petroleum hydrocarbons	Feathers – reduces insulating properties, water repellency, Toxicity due to ingestion.	Direct contact, ingestion, carried on parents feathers as indirect pathway to eggs	Exposure may result in hypothermia, lack of buoyancy, toxicity to bird or eggs	See crude oil and diesel.	USFWS, 2009
Dispersants	Polyacrylates, lignosulphonates, tannins	Unknown	Direct, oral	Skin, eye, lungs	Low toxicity. Lignosulphonates have oral LD50 > 2 g/kg; NOAELs about 1 g/kg/d. Skin, eye, respiratory irritants. Tannins low acute toxicity.	IPIECA/ OGP, 2009
Emulsifiers	Soaps, amines, imidazolines, polyamides	Could remove natural oils from feathers	Direct, oral	Skin, eye	Eye and skin irritants	IPIECA/ OGP, 2009
Crude oil	Various petroleum hydrocarbons: aliphatic, alicyclic, and aromatic hydrocarbons. It may also contain small amounts of nitrogen, oxygen and sulphur compounds.	Feathers – reduces insulating properties, water repellency, Toxicity due to ingestion.	Direct contact, ingestion, carried on parents feathers as indirect pathway to eggs	Exposure may result in hypothermia, loss of buoyancy, toxicity to bird or eggs	Crude oil is of low acute toxicity with dermal and oral LD50 values greater than 2000 mg/kg. Inhalation toxicity expected to be low. Light crude oils may pose an aspiration hazard and may also cause symptoms of central nervous system depression. Upon repeated exposure, some light crude oils may cause skin dryness or cracking.	IPIECA/ OGP, 2009; USFWS, 2009
Diesel	Straight and branched chain alkanes (paraffins), cycloalkanes (naphthenes), aromatic hydrocarbons and mixed aromatic cycloalkanes (cycloalkanoaromatics), mainly 2 and 3-ring or low-molecular weight PAHs. Use of fluids containing heavier atmospheric, vacuum or cracked components is likely to result in an increase in the content of 4 to 6-ring PAHs.	Likely to be the same as crude oil, above.	Likely to be the same as crude oil above.	Likely to be the same as crude oil above.	Skin exposure will remove natural fats; repeated or prolonged exposure can result in drying and cracking, irritation and dermatitis. Diesel fuels may contain 10% (w) or more PAH's.	IPIECA/ OGP, 2009
Highly refined mineral oil	Mineral oil	Unknown	Direct, oral	NA	Low acute toxicity; not irritating or reprotoxic.	IPIECA/ OGP, 2009
Synthetic paraffin	Synthetic paraffin	Unknown	Direct, oral	NA	Low acute toxicity; not irritating or reprotoxic.	IPIECA/ OGP, 2009
Linear alpha olefins	Linear alpha olefins	Unknown	Direct, oral	Skin, eyes	Low toxicity upon acute oral, dermal and inhalation exposure. Alpha olefins are slightly irritating to the skin and eyes of rabbits. Low toxicity(kidney), are not neurotoxin, produce no adverse effects on reproduction or fetal development.	IPIECA/ OGP, 2009
Internal olefins	Olefins (alkenes) ranging in carbon number from C6 to C24, alpha (linear) and internal (linear and branched)	Unknown	Direct, oral	None	Low mammalian acute toxicity by the oral, inhalation and dermal routes of exposure. Repeated-dose studies indicate low toxicity in rats. Not neurotoxin. Not expected to cause reproductive or developmental toxicity. Not eye irritants or skin sensitizers. Prolonged exposure of the skin for many hours may cause skin irritation. The weight of evidence indicates alpha and internal olefins with carbon numbers between C6 and C24 have a similar and low level of mammalian toxicity. Toxicity not affected by location of the double bond or the addition of branching to the structure.	IPIECA/ OGP, 2009

TABLE 2. SUMMARY OF POTENTIAL CHEMICAL HAZARDS OF MAJOR COMPONENTS IN DRILLING FLUIDS
AVIAN PROTECTION PLAN
SM ENERGY COMPANY

Category	Chemical Names	Potential Avian Hazard	Likely Avian Route of Entry	Target Organ	General Toxicological Data	Source
Inorganics						
Barite	BaSO ₄	Unknown	Direct, oral	Skin, eye	Skin irritant, eye irritant, low oral toxicity. Toxicity varies by salt. Barite (BaSO ₄) not absorbed across GI tract; nontoxic.	IPIECA/ OGP, 2009
Brine	Various salts and formates (KCl, NaCl, NaCOOH, CaCl ₂ , KCOOH, NaBr, CaBr ₂ , ZnBr ₂ , CsCOOH)	High concentrations combined with low temperatures result in salt encrustation. Prolonged exposure with no fresh water could result in salt toxicosis.	Direct, oral	Varies by salt. Typically skin, gastrointestinal tract, respiratory tract	CaBr ₂ : skin irritant CaCl ₂ : NOAEL, oral, rats 1000–2000 mg/kg bw/day for 12 months. An RDI > 1000 mg each of the ions is recommended. A developmental toxicity study revealed no toxic effects on dams or fetuses at doses up to 189 mg/kg bw/day (mice), 176 mg/kg bw/day (rats) and 169 mg/kg bw/day (rabbits). Formates: NaCOOH LD50 oral rat > 3000 mg/kg; KCOOH LD50 oral mouse 5500 mg/kg; CsCOOH LD50 oral rat 1780 mg/kg NaBr: Low oral toxicity. Eye, skin irritant. KCl: Gastrointestinal irritant effects in humans caused by KCl administered orally have been reported at doses from about 31 mg/kg bw/day. NaCl: oral acute toxicity 500–1,000 mg sodium chloride/kg body weight; vomiting, ulceration of the gastrointestinal tract, muscle weakness and renal damage, dehydration, metabolic acidosis and severe peripheral and central neural effects. Chronic effects of high intakes (>6 g/day) include the development of hypertension. In rodents, extremely high doses of sodium chloride during pregnancy caused musculoskeletal abnormalities, fetotoxicity. ZnBr ₂ : Inhalation can cause irritation of mucous membranes and upper respiratory tract (lung damage, burning, coughing, wheezing, laryngitis, shortness of breath), headache, nausea and vomiting. Ingestion causes severe burns of the mouth, throat, and stomach, vomiting and diarrhea, central nervous system depression. Eye and skin irritation and burns.	IPIECA/ OGP, 2009
Iron carbonate	FeCO ₃	Unknown	Direct, oral	Unknown	Most data for ferrous sulfate. LD50 oral rat FeSO ₄ is 319-1480 mg/kg. Calves fed 4000 ppm FeCO ₃ diet no effects.	IPIECA/ OGP, 2009
Hematite	Fe ₂ O ₃	Unknown	Direct, oral	None	LD50 oral rat > 10,000 mg/kg	IPIECA/ OGP, 2009
Caustic Soda	Sodium hydroxide	Unknown	Inhalation; skin, eye contact	Respiratory system, lungs, skin, eyes	LDLo, oral, rabbit: 500 mg/kg LD50, skin, rabbit: 1350 mg/kg Corrosive, irritant, irritating to respiratory tract. causes burns to mucous membranes, throat, esophagus, and stomach	OSHA. http://www.osha.gov/SLTC/etools/oilandgas/drilling/msds.html

Notes:

NOAELs - No Observable Adverse Effect Level

LD50 - Lethal Dose, 50%

LDLo - Lethal Dose Low

NA - Not Applicable

TABLE 3. AVIAN PROTECTION OPTIONS AND SCHEDULE
AVIAN PROTECTION PLAN
SM ENERGY COMPANY

Asset to be Protected	Temporary Protection	Schedule	Permanent Protection	Schedule
Reserve Pits	Hazing	Between Drill Rig Removal and Placement of Permanent Protective Measures	Netting, Bird Balls	Until permanently closed
Closed-Loop Drilling	Not Applicable	During Active Operations	If liquids present see Reserve Pits	If liquids remain upon completion utilize Reserve Pit Temporary and Permanent protection.
Freshwater Frac Ponds	Not Applicable	Not Applicable	NA	NA
Freshwater Flowback Pits	Not Applicable	Not Applicable	Netting, Bird Balls (if contains contaminated water not pumped into a flowback tank)	Until permanently closed
Produced Water Pits	Not Applicable	Not Applicable	Netting, Bird Balls	Until permanently closed
Source Water Pits	Not Applicable	Not Applicable	NA	NA
Secondary Containment of Aboveground Storage Tanks (AST)	Not Applicable	Not Applicable	Cover, netting	Until removed from site
Buildings and Equipment	Not Applicable	During Active Operations	Netting, Wire, Mesh	Until removed from site
Powerline Connections to Meter Boxes	Not Applicable	Not Applicable	Anti-perching, Anti-collision	Until lease is terminated

Note:

NA - Not Applicable

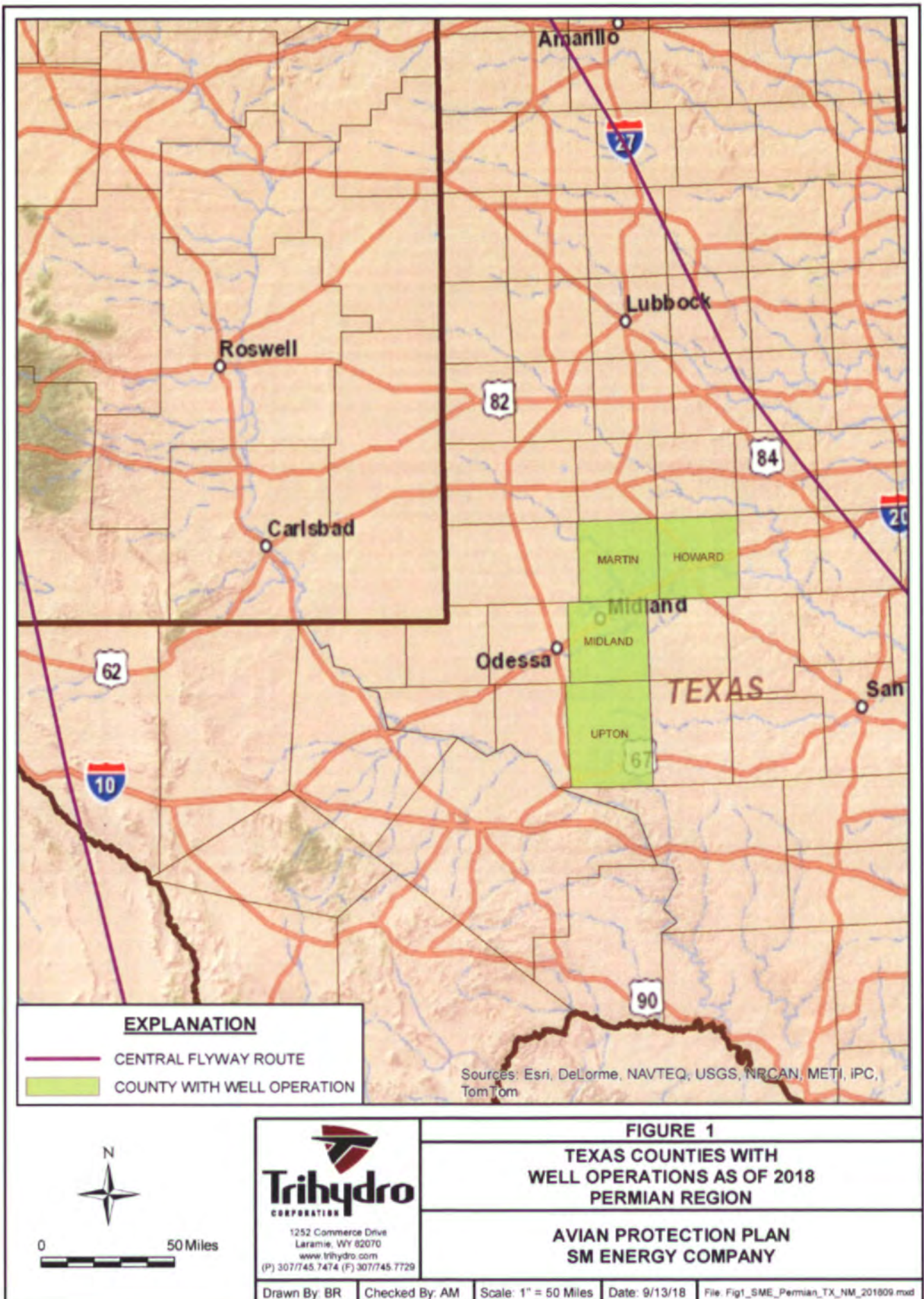
**TABLE 4. SME, USFWS, AND TRIHYDRO CONTACT INFORMATION
AVIAN PROTECTION PLAN
SM ENERGY COMPANY**

SM Energy Company's Bird Incident Control Operator		
(b) (6)	SM Energy Company 1775 Sherman Street, Ste. 1200 Denver, Colorado 80203	(303) 864-2567 (ofc) (b) (6)
SM Energy Company's Regional Contacts		
South Texas / Gulf Coast	Permian	
(b) (6)	(b) (6)	
Houston Regional EHS Manager (281) 670-1081 (ofc)	Midland Regional EHS Manager (432) 688-3391 (ofc)	
(b) (6)	(b) (6)	
(b) (6)	(b) (6)	
Sr. Regional Environmental Specialist (281) 670-1095 (ofc)	Sr. Regional EHS Specialist (432) 688-1703 (ofc)	
(b) (6)	(b) (6)	
USFWS Office of Law Enforcement¹		
Texas (South Texas/Gulf Coast Region)		
Special Agent	Texas Law Enforcement Office Houston, Texas	(936) 271-2250
Texas (Permian Region)		
Special Agent	Texas Law Enforcement Office Lubbock, Texas	(806) 472-7273
SEE THE USFWS WEBSITE BELOW FOR ADDITIONAL CONTACT INFORMATION¹		
Trihydro Bird Support Staff Contact Information		
(b) (6)	Trihydro Project Manager/Wildlife Biologist	(307) 745-7474
Bird Rehabilitator Contact Information		
South Texas / Gulf Coast	Permian	
Wildlife Rescue and Rehabilitation Kendalia, TX (830) 336-2725 (24/7)	(b) (6) A to Z Veterinary Clinic, Midland, TX (432) 425-3533 (24/7) (432) 520-8387	(b) (6) Wildlife Rehabilitation Specialist Odessa, TX (432) 770-0641
Wildlife Rescue and Rehabilitation San Antonio, TX (210) 257-8823	(b) (6) Permitted Home Rehabilitator Big Spring, TX (432) 267-6536	South Plains Wildlife Rehabilitation Center Lubbock, Texas (806) 799-2124
(b) (6)		
Texas Sealife Center Corpus Christi, TX (281) 455-0477 (361) 589-4023		

Note:

¹ <http://www.fws.gov/southwest/lawenforcement/statecontacts.html>

FIGURES





EXPLANATION

- CENTRAL FLYWAY ROUTE
- MISSISSIPPI FLYWAY ROUTE
- COUNTY WITH WELL OPERATIONS



1252 Commerce Drive
Laramie, WY 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 2

**TEXAS COUNTIES WITH
WELL OPERATIONS AS OF 2018
SOUTH TEXAS/GULF COAST REGION**

**AVIAN PROTECTION PLAN
SM ENERGY COMPANY**

Drawn By: BR Checked By: AM Scale: 1" = 50 Miles Date: 6/19/17 File: Fig4_SME_GulfCoast_STX_201706.mxd

APPENDIX A

STATE REGULATIONS PERTAINING TO RESERVE PITS, AVIAN PROTECTION PLAN

SM ENERGY COMPANY

PERMIAN AND SOUTH TEXAS / GULF COAST REGIONS

**APPENDIX A. STATE REGULATIONS PERTAINING TO RESERVE PITS
AVIAN PROTECTION PLAN
SM ENERGY COMPANY, PERMIAN AND SOUTH TEXAS/GULF COAST REGIONS**

TEXAS

RULE §3.22 Protection of Birds

(a) If an operator who maintains a tank or pit does not take protective measures necessary to prevent harm to birds, the operator may incur liability under federal and state wildlife protection laws. Federal statutes, such as the Migratory Bird Treaty Act, provide substantial penalties for the death of certain species of birds due to contact with oil in a tank or pit. These penalties may include imprisonment. State statutes also protect certain species of birds. The Railroad Commission of Texas (commission) is cooperating with federal and state wildlife authorities in their efforts to protect birds.

(b) An operator must screen, net, cover, or otherwise render harmless to birds the following categories of open-top tanks and pits associated with the exploration, development, and production of oil and gas, including transportation of oil and gas by pipeline:

- (1) open-top storage tanks that are eight feet or greater in diameter and contain a continuous or frequent surface film or accumulation of oil; however, temporary, portable storage tanks that are used to hold fluids during drilling operations, workovers, or well tests are exempt;
- (2) skimming pits as defined in §3.8 of this title (relating to Water Protection) (Statewide Rule 8); and
- (3) collecting pits as defined in §3.8 of this title (relating to Water Protection) that are used in skimming pits.

(c) If the commission finds a surface film or accumulation of oil in any other pit regulated under §3.8 of this title (relating to Water Protection), the commission will instruct the operator to remove the oil. If the operator fails to remove the oil from the pit in accordance with the commission's instructions or if the commission finds a surface film or accumulation of oil in the pit again within a 12-month period, the commission will require the operator to screen, net, cover, or otherwise render the pit harmless to birds. Before complying with this requirement, the operator will have a right to a hearing upon request. In addition to the enforcement actions specified by this subsection, the commission may take any other appropriate enforcement actions within its authority.

RULE §3.8 Water Protection

(H) Backfill requirements.

- (i) A person who maintains or uses a reserve pit, mud circulation pit, fresh makeup water pit, fresh mining water pit, completion/workover pit, basic sediment pit, flare pit, or water condensate pit shall dewater, backfill, and compact the pit according to the following schedule.
 - (I) Reserve pits and mud circulation pits which contain fluids with a chloride concentration of 6,100 mg/liter or less and fresh makeup water pits shall be dewatered, backfilled, and compacted within one year of cessation of drilling operations.
 - (II) Reserve pits and mud circulation pits which contain fluids with a chloride concentration in excess of 6,100 mg/liter shall be dewatered within 30 days and backfilled and compacted within one year of cessation of drilling operations.
 - (III) All completion/workover pits used when completing a well shall be dewatered within 30 days and backfilled and compacted within 120 days of well completion. All completion/workover pits used

**APPENDIX A. STATE REGULATIONS PERTAINING TO RESERVE PITS
AVIAN PROTECTION PLAN
SM ENERGY COMPANY, PERMIAN AND SOUTH TEXAS/GULF COAST REGIONS**

when working over a well shall be dewatered within 30 days and backfilled and compacted within 120 days of completion of workover operations.

(V) (iii) The director may require that a person who uses or maintains a reserve pit, mud circulation pit, fresh makeup water pit, fresh mining water pit, completion/workover pit, basic sediment pit, flare pit, non-commercial fluid recycling pit, or water condensate pit backfill the pit sooner than the time prescribed by clause (i) of this subparagraph if the director determines that oil and gas wastes or oil field fluids are likely to escape from the pit or that the pit is being used for improper storage or disposal of oil and gas wastes or oil field fluids.

(iv) Prior to backfilling any reserve pit, mud circulation pit, or completion/workover pit, basic sediment pit, flare pit, non-commercial fluid recycling pit, or water condensate pit whose use or maintenance is authorized by this paragraph, the person maintaining or using the pit shall, in a permitted manner or in a manner authorized by paragraph (3) of this subsection, dispose of all oil and gas wastes which are in the pit.

[https://texreg.sos.state.tx.us/public/readtac\\$ext.ViewTAC?tac_view=4&ti=16&pt=1&ch=3&rl=Y](https://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=4&ti=16&pt=1&ch=3&rl=Y)

APPENDIX B

**U.S. FISH AND WILDLIFE SERVICE APRIL 11, 2018
GUIDANCE ON THE RECENT M-OPINION AFFECTING THE MBTA**



In Reply Refer To:
FWS/AMB/067711

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Washington, D.C. 20240

APR 11 2018



Memorandum

To: Service Directorate (b) (6)

From: Principal Deputy Director (b) (6)

Subject: Guidance on the recent M-Opinion affecting the Migratory Bird Treaty Act

To ensure consistency with the recently issued M Opinion, the U.S. Fish and Wildlife Service (FWS) is modifying some policies and practices within its programs. This memorandum provides guidance to clarify what constitutes prohibited take, what actions must be taken when conducting lawful intentional take (e.g., obtain a permit via 50 C.F.R. Part 21), and what changes to prior practice should be made in light of the M-Opinion.

The M-Opinion concludes that the take of birds resulting from an activity is not prohibited by the MBTA when the underlying purpose of that activity is not to take birds. We interpret the M-Opinion to mean that the MBTA's prohibitions on take apply when the *purpose* of an action is to take migratory birds, their eggs, or their nests. Conversely, the take of birds, eggs or nests occurring as the result of an activity, the purpose of which is not to take birds, eggs or nests, is not prohibited by the MBTA.

The mission of the Service is to work with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people. Migratory bird conservation remains an integral part of our mission. Further:

1. The Endangered Species Act (16 U.S.C. 35 § 1531 et seq.; ESA) and Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668-668c; Eagle Act), as well as some State laws and regulations are not affected by the M-Opinion.
2. The National Environmental Policy Act (NEPA, 42 U.S.C. § 4321 et seq.) provides a process under which federal agencies must evaluate the impacts of their actions on the human environment [including the natural and physical environment and relationship of people with that environment (40 C.F.R. § 1508.14)] and provide transparency to the American public. Birds are part of the human environment, and should be included in relevant environmental review processes as directed by NEPA.

The Service will continue to work with any partner that is interested in voluntarily reducing impacts to migratory birds and their habitats. We will continue to develop best management practices to protect migratory birds and their habitats in partnership with any industry, federal, state, and tribal entity as interest dictates, and in the course of project review, will continue to

provide recommendations through our advisory role under other authorities, including NEPA and the Fish and Wildlife Coordination Act (16 U.S.C. §§ 661-667e). The Service will clearly communicate relevant authorities under which we make our recommendations. The Service will ensure that our comments, recommendations, or requirements are not based on, nor imply, authority under the MBTA to regulate incidental take of migratory birds. Furthermore, the Service will not withhold a permit, request, or require mitigation based upon incidental take concerns under the MBTA. Attached is a set of questions and answers that serve to clarify the effect of the M-Opinion.

If you have additional questions, please contact the Migratory Bird Program, 202-208-1050.

Attachment

ATTACHMENT

FREQUENTLY ASKED QUESTIONS REGARDING IMPLEMENTATION OF THE M-OPINION

1. **Clarity on the distinction between *intent* to take a bird versus *knowing* a bird will be taken. Does the underlying legality of an activity that takes birds affect that distinction and does *reducing a bird to possession* have any bearing on the situation? The following examples are real situations the Service may face under the new M-Opinion:**

- a. **A State Department of Transportation wants to paint a bridge. Prior to painting the bridge, all Barn Swallow nests are pressure washed off the bridge, which would result in destruction of eggs and death of nestlings. Is the intentional removal of nests prior to painting the bridge intentional take and does it require a permit prior to the action?**

Answer: Yes. The intentional removal of active barn swallow nests, killing eggs and nestlings, is an affirmative act that has the taking of active nests and contents as its purpose. Because this example stipulates that the removal of nests prior to painting was purposeful, a permit would be required to legally authorize this activity. If the intent was to simply paint the bridge and the nests were accidentally destroyed incidental to that process, that destruction would not violate the MBTA.

- b. **A homeowner knows that Chimney Swifts are nesting in their chimney. If the homeowner lights a fire and destroys the nests, is this considered intentional take or incidental take under the M-Opinion?**

Answer: Possibly either, but more information is needed to determine whether the homeowner lit the fire to intentionally destroy swift nests or simply lit the fire to heat the house. The difference between this activity and the previous example is the subjective purpose of the activity. The intentional destruction of chimney swift nests by lighting a fire would constitute an intentional act, the purpose of which is to destroy nests. Whether lighting the fire violates the MBTA in that scenario would also depend on whether nests are active and contain eggs, young, or adult birds that could not escape quickly enough. A permit would be required to legally authorize this activity if the purpose is to destroy nests and they are active. A permit would not be needed if the homeowner lit the fire for the purpose of heating the house regardless of whether they were aware of swift nests in the chimney. Note that although knowledge of the presence of a nest or nests before lighting a fire would not be enough by itself to constitute a violation of the Act, it could be used as evidence to show the homeowner did in fact light the fire with the purpose of destroying the nests.

- c. **Is removing a structure (e.g., dilapidated barn) with known nesting owls in the barn, which will die with the destruction of the barn, a violation of MBTA? How does knowledge or reasonable foreseeability that that an activity will kill birds affect whether that action violates the MBTA?**

Answer: This would not be a violation of the MBTA. Removing or destroying the structure would rarely if ever be an act that has killing owl nestlings as its purpose. Again, the purpose of the activity determines whether this is an MBTA violation. Unless the purpose of removing the structure was in fact to kill the owls, their deaths would be incidental to the activity of removing the barn. The landowner's knowledge, or whether it was reasonably foreseeable, that destroying the barn would kill the owls is not relevant. All that is relevant is that the landowner undertook an action that did not have the killing of barn owls as its purpose.

This same analysis would apply to other structures, such as bridges.

- d. **A rancher shoots Black Vultures on his property without obtaining a depredation permit (50 C.F.R. § 21.41 – Depredation Permits). The rancher leaves the dead birds without subsequently collecting (possessing) them. Does the desire to, or failure to reduce a bird to possession affect whether that action violates the MBTA?**

Answer: Shooting Black Vultures without a permit violates the MBTA because it is an affirmative action that has killing birds as its purpose. The traditional definition of the term "take" includes reducing wildlife to human control, as noted in the M-Opinion. However, purposeful killing does not necessarily require any desire or affirmative action to gain possession of the birds. Shooting and killing migratory birds renders them subject to human control whether or not the shooter physically takes possession of the bodies. In fact, this issue was expressly addressed in footnote 132 of the M-Opinion: "We note that this language makes clear that the sort of 'human control' referred to by Justice Scalia includes the act of intentionally killing even in the absence of further intent to reduce the particular animal to human possession. Thus, intentional killing is itself a form of 'human control'." Note that shooting at and missing a black vulture would also be a violation (attempt), which obviously could not result in reducing the bird to possession.

2. **How does the legality of an activity affect the determination of whether it is an MBTA violation or not? For example, if an illegal activity kills birds, but that was not the intent of the activity (e.g., using a banned pesticide, or without following application labels in violation of Federal Insecticide Fungicide Rodenticide Act (FIFRA)) is this still considered an incidental taking that is not a violation of the MBTA?**

Answer: The legality of an activity does not affect the determination of whether it results in an MBTA violation. Thus, if the landowner in the example used the pesticide with specific intent to kill birds, it would violate the MBTA. However, if the landowner used a pesticide to purposely kill something other than migratory birds, it would not be a violation if birds die as

a result because the purpose of the act was not taking of birds. If the landowner used a pesticide with the general intent of killing wildlife, and the pesticide killed protected bird species, that could be a violation of the MBTA but liability would likely turn on the facts of the specific case. Note, applying a pesticide illegally in a way that ends up killing birds when they are not the intended target may not be an MBTA violation, but the fact that birds died may still provide additional evidence for prosecuting the FIFRA violation.

3. **How does the M-Opinion affect existing statutory amendments to the MBTA that specifically address incidental take, such as P.L. 107-314, Sec. 315 and subsequent regulation (50 C.F.R. § 21.15 – Authorization of take incidental to military readiness activities) or P.L. 114-94, Sec. 1439 (the FAST Act)?**

Answer: The M-Opinion does not affect the military-readiness rule at 50 C.F.R. § 21.15, which was the result of Congress's direction to the Secretary of the Interior to prescribe regulations authorizing incidental take of migratory birds during military-readiness activities. Thus, the Secretary could only withdraw the rule if directed to do so through subsequent legislation. As the M-Opinion explains, "Congress was acting in a limited fashion to preempt a specific and immediate impediment to military-readiness activities." M-Opinion, p. 31. FWS and the Department of Defense (DOD) should continue to follow the requirements of the military-readiness rule. Nonetheless, incidental take of migratory birds by DOD does not violate the MBTA, regardless of whether DOD is complying with the terms of the military-readiness rule.

The FAST Act authorizes take of nesting swallows that interfere with bridge construction in certain circumstances. In most circumstances, such take would be considered purposeful and thus prohibited by the MBTA. Accordingly, the M-Opinion should not affect authorization of the take of active swallow nests. To the extent the FAST Act was intended to authorize incidental take, the terms of that statute should still be complied with for the same reasons discussed above for the military-readiness rule legislation.

4. **What effect does the M-Opinion have on current settlement agreement negotiations to address incidental take of migratory birds or court-mandated permits resulting from past settlement agreements?**

Answer: Current settlement agreement negotiations should not address incidental take of migratory birds for purposes of enforcing the MBTA, but may still include measures necessary to comply with other relevant statutes when appropriate (for example statutes implemented by the Natural Resource Damage Assessment and Restoration program (NRDAR, as explained below). The Department is currently reviewing the Service's position on current negotiations to address incidental take of bald and golden eagles under the Eagle Act. These species are also covered under the MBTA. The Service has brought seven enforcement actions against companies for incidental take of eagles since 2015, which included both MBTA and Eagle Act charges. Only one of these remains unresolved; the other six were resolved through settlement agreements. The Service will no longer pursue MBTA charges against projects that cause eagle deaths, but the M-Opinion does not affect the Service's ability to bring Eagle Act claims in these cases.

We are not aware of any court-authorized settlement agreements that mandate obtaining a permit to cover future incidental take of migratory birds under the MBTA. Since 2013, the Department of Justice has brought two prosecutions for take of eagles and species protected only by the MBTA. These prosecutions were resolved at the request of defendants based on MBTA violations only, although the conduct could also have been charged under the Eagle Act with regard to the eagle deaths. These plea agreements provided that companies must implement plans aimed at preventing bird deaths at eight commercial wind projects and apply for eagle permits to cover incidental take of eagles under the Eagle Act. The Service Chief of Law Enforcement's Directive applying to civil administrative enforcement of avian take at wind projects includes a limited option for settlements to resolve violations of the MBTA. However, that option is no longer operable after issuance of the M-Opinion. We are currently determining whether the M-Opinion will require the Service to revisit past settlement agreements that require ongoing implementation of best management practices to avoid or reduce incidental take of migratory birds by wind-energy facilities and other industrial activities.

5. How does the M-Opinion affect the Natural Resources Damage Assessment program (i.e., specifically related to oil spills)?

Answer: The M-Opinion does not directly affect the NRDAR program because statutory authorities that provide the basis for the program do not include the MBTA. Pursuant to Comprehensive Environmental Response Compensation and Liability Act, Oil Pollution Act, and Clean Water Act, the Department is authorized to assess injury to natural resources caused by releases of hazardous substances and discharges of oil to compensate the public for lost natural resources and their services. The Department's assessment of natural resource injuries under the NRDAR program include any injury to migratory birds, which in many cases could otherwise be classified as incidental take.

In practice, however, the M-Opinion will have an effect on future claims seeking fines or penalties for violations of the MBTA from companies responsible for oil spills and hazardous releases. In addition to pursuing damage claims under the NRDAR program, the Department has pursued MBTA claims against companies responsible for oil spills that incidentally killed or injured migratory birds. That avenue is no longer available.

6. How does the M-Opinion affect consultations or habitat conservation plans under sections 7 and 10 of the ESA?

Answer: When processing Habitat Conservation Plans under Section 10 or consulting on Section 7 of the ESA, incidental take coverage should only include listed species listed under the ESA. As concluded in the M-Opinion, incidental take of migratory birds is not prohibited so no restrictions, minimization measures, or mitigation should be part of an incidental take permit or an incidental take statement for purposes of the MBTA (rather than the ESA). An applicant or federal government action agency can take voluntary measures related to migratory birds but it must be made clear that no such actions are required by the MBTA.

7. How does the M-Opinion affect technical assistance under the Avian and Bat Conservation Plans?

Answer: Technical assistance can still be given in development of Avian and Bat Conservation Plans. However, any suggestions or guidance related to migratory birds must be relayed as completely voluntary actions. Part of the technical assistance should include the statement that incidental take of migratory birds is not prohibited by the MBTA.

APPENDIX C

**U.S. FISH AND WILDLIFE SERVICE JUNE 14, 2018 DESTRUCTION AND RELOCATION OF
MIGRATORY BIRD NEST CONTENTS MEMO FREQUENTLY ASKED QUESTIONS**



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington, D.C. 20240



In Reply Refer To:
FWS/DMBM/AMB/068029

JUN 14 2018

Memorandum

To: Regional Directors

From: Assistant Director, Migratory Birds

Subject: Destruction and Relocation of Migratory Bird Nest Contents

(b) (6)

The purpose of this memorandum is to clarify the application of the Migratory Bird Treaty Act (50 C.F.R. §§ 703-712; MBTA) to the destruction and relocation of migratory bird¹ nests and provide guidance for advising the public regarding this issue. This Memo replaces Migratory Bird Permit Memorandum MBPM-2 on Nest Destruction (Apr 15, 2003). This memo does not supersede or apply to other Federal, State, or Tribal laws and regulations, including the Endangered Species Act (16 U.S.C. §§ 1531; ESA) and the Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668-668d; Eagle Act).

BACKGROUND:

The MBTA protects migratory birds, including migratory bird nests, eggs, and chicks. The prohibitions of the MBTA include *possession, transport, import, export, purchase, sale, barter, and take*. The regulatory definition of take, as defined by 50 C.F.R. § 10.12, means to *pursue, shoot, wound, kill, trap, capture, or collect, or attempt thereof*. This memo clarifies the Service's interpretation of how these prohibitions apply to migratory bird nests, eggs, and chicks.

The MBTA does not prohibit the destruction of an inactive² migratory bird nest, provided that no possession occurs during the destruction and no permit or other regulatory authorization is required (see Policy #1 below). Additionally, the Service should make every effort to inform the public of how to minimize the risk of killing migratory bird species whose nesting behaviors make it difficult to determine occupancy status or continuing nest dependency (e.g., cavity and burrow nesting species).

¹ A list of species protected by the MBTA can be found at 50 C.F.R § 10.13

² An active nest is one that contains viable eggs and/or chicks. A nest becomes active when the first egg is laid and remains active until fledged young are no longer dependent on the nest. Nests that are empty, contain non-viable eggs, or are being built but do not yet have an egg in them are considered inactive.

On December 22 2017, the Department of Interior released M-Opinion 37050 (Opinion) regarding whether incidental take (the taking of migratory birds that results from an activity, but is not the purpose of the activity) is prohibited under the MBTA. The Opinion concludes that "the MBTA's prohibition on pursuing, hunting, taking, capturing, killing, or attempting to do the same applies only to direct and affirmative purposeful actions that reduce migratory birds, their eggs, or their nests, by killing or capturing, to human control" (M-Opinion, pg. 41). The Opinion clarifies that the MBTA does not prohibit the incidental or unintentional take of migratory birds and/or their active nest contents.

Therefore, an individual or entity may destroy an active nest while conducting any activity where the intent of the action is not to kill migratory birds or destroy their nests or contents. However, because the MBTA specifically protects migratory bird nests, eggs, chicks, and adults from possession and transport without a permit, individuals and entities cannot, in most cases, take reasonable protective actions (such as removing eggs and chicks prior to nest destruction or relocating nests) without first obtaining authorization to do so.

Currently, there are two mechanisms explained in Policy #2 and Policy #3 below for the temporary possession and transport of healthy, unaffected birds for the purpose of removing them from imminent danger (i.e., immediate threat of mortality). Policy #2 explains in more detail the Service's Good Samaritan provision included in the Rehabilitation regulation (50 C.F.R. § 21.31(a)). Policy #3 outlines the permitting mechanism under the Special Purpose regulation (50 C.F.R. § 21.27) for active nest situations that fall outside the Good Samaritan provision.

POLICY:

1. Inactive Nest Destruction

A permit or other regulatory authorization is not required under the MBTA to destroy an inactive migratory bird nest³, provided no possession occurs during or after the destruction. The MBTA does not authorize the Service to issue permits in situations where the prohibitions of the Act do not apply, such as the destruction of inactive nests.

The public should be made aware that, due to the biological and behavioral characteristics of some migratory bird species, destruction of their nests entails an elevated risk of unknowingly killing them. For example, it is difficult to detect whether or not the nest of a cavity-nesting species, such as a burrowing owl or a bank swallow, is active. Before destroying this type of nest, we recommend consulting with an expert (e.g., USDA-Wildlife Services, Wildlife Professionals, Environmental Consultants, or Rehabilitation experts) who can help determine nest activity.

Inactive nests may be protected by federal statutes other than the MBTA, such as nests of bird species federally listed as threatened or endangered under the ESA as well as nests of bald eagles and golden

³ An inactive nest is one that is empty, contains non-viable eggs, or is being built but does not yet have an egg in the nest.

eagles, which are protected under the Eagle Act. State, Tribal, and local laws may also protect inactive bird nests. The Service should make every effort to ensure awareness regarding these possible additional protections and should inform the public of factors that will help minimize the likelihood that bird deaths would occur should nests be destroyed (i.e., when active nesting season normally occurs).

2. Good Samaritan Provision

For active nests, an individual or entity whose activity unintentionally or incidentally destroys an active nest, or is likely to do so, may collect the eggs or chicks and temporarily possess them for the purposes of transport to a federally-permitted rehabilitator under the Good Samaritan authorization in the rehabilitation regulation (50 C.F.R. § 21.31(a)). This Good Samaritan provision states: "Any person who finds a sick, injured, or orphaned migratory bird may, without a permit, take possession of the bird in order to immediately transport it to a permitted rehabilitator" (50 C.F.R. § 21.31(a)). The Service interprets the definition of "finds" to include encountering birds that become sick, injured, or orphaned while conducting activities where the intention is not to kill migratory birds or destroy their nests. "Finds" also applies when a planned activity is likely to cause or is about to cause destruction of an active nest resulting in the death, injury, or orphaning of eggs or chicks because, if nest destruction is imminent, any egg or chick in that nest can be considered orphaned. The Good Samaritan provision applies to the landowner of where the action is taking place and anyone designated to act on their behalf (e.g., wildlife professionals, pest-control contractors, rehabilitators, etc.). The Good Samaritan provision does not apply to regularly re-occurring actions where a single entity purposefully removes nests (e.g., a company that needs to purposefully remove nests from electrical distribution poles). For these situations a permit is recommended (see #3 below).

If the landowner is not comfortable with collecting the eggs or chicks, they may designate someone else to conduct the work on their behalf. After the eggs or chicks are collected, a federally-permitted rehabilitator may accept them as orphaned birds, consistent with their rehabilitation permit. All requirements and conditions of a rehabilitation permit apply. Rehabilitators have discretion as to what they will and will not accept and to determine the fate of any eggs or chicks accepted, including euthanasia. If a rehabilitator is unavailable or will not accept the eggs or chicks, the landowner (or the person acting on their behalf) may take the eggs or chicks to a licensed veterinarian who may temporarily possess, transfer, or euthanize the eggs or chicks without a permit (50 C.F.R. § 21.12(c)).

The Service can provide contact information for federally-permitted rehabilitators. The Service does not maintain or provide information on contractors, such as wildlife professionals, contractors, or pest control companies. Finally, the Service will provide information for voluntary reporting of active nest destruction in our Injury and Mortality Reporting System.

3. Special Purpose Permits

Permits are required to relocate a nest rather than destroy it, as possession of any nest is prohibited under the MBTA without prior authorization. Permits may also be appropriate for entities with ongoing

projects that regularly need to intentionally remove or destroy nests. In these cases, permits can authorize possession of nests for various purposes, including active and inactive nest relocation, collection of nest contents for humane disposal, a combination thereof, or other compelling justifications. The Service can issue Special Purpose permits (50 C.F.R. § 21.27) to individuals or entities in these situations. In the case of utilities, authorization to destroy or relocate active and inactive nests is covered by applying for a specific type of special purpose permit: Special Purpose – Utility (<https://www.fws.gov/forms/3-200-81.pdf>).

Biologically, the success of nest relocation varies widely based on a number of factors, such as the distance moved, the presence of chicks, the nesting substrate, and the tolerance of the species and individual birds. Service biologists can provide technical assistance as to whether or not nest relocation is likely to succeed. Nest relocation should only be recommended for consideration when likely to result in success or when there are no other viable alternatives to achieve a conservation outcome. Relocation permit conditions will include short-term monitoring requirements by the person doing the nest relocation to ensure adults return to attend to the nest and an alternative protocol in the event nest abandonment occurs (such as collection and transport to a rehabilitator or veterinarian for euthanasia).

4. Other Permits and Authorizations

Other situations where there is purposeful take of active nests may fall under different permit types or regulatory authorizations. The Service will advise when a different permit or authorization may be appropriate.

Attachment 1:
Migratory Bird Nest Destruction and Relocation
Frequently Asked Questions
June 14, 2018

The Service recommends conducting activities outside the bird nesting season to avoid the need for active nest relocation or destruction, when appropriate. This is because (1) successful reproduction is essential to healthy bird populations; (2) measures can often be taken in advance to prevent nesting where it will create a problem; (3) inactive nests and nests under construction may be proactively destroyed without a permit; and (4) most bird species have short nesting cycles, and it can be practicable to delay an activity until the nestlings have fledged.

Notes:

- "Bird" refers to any species federally protected under the Migratory Bird Treaty Act (50 C.F.R. § 10.13; MBTA).
- This document does not apply to Bald Eagles and Golden Eagles or federally listed threatened or endangered species. The Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668–668d) and the Endangered Species Act (16 U.S.C. §§ 1531) have additional protections for these species.
- States, Tribes, and local governments may have additional protections for active and/or inactive nests.

1. *Is a permit needed to destroy an inactive migratory bird nest?*

No. A permit is not required to destroy migratory bird inactive nests (i.e., nests without viable eggs or chicks), provided the nest is destroyed and not retained. From the time that one or more eggs are laid until chick(s) fledge, a nest is considered active and a permit is required for purposeful take of that nest. The Destruction and Relocation of Migratory Bird Nests Memorandum (MBPM-068029; 06/14/2018) provides additional guidance on inactive nest destruction (<http://www.fws.gov/policy/m0208.pdf>).

2. *Is a permit needed to conduct activities near an active migratory bird nest?*

No. A permit is not needed to conduct work near an active nest. An active migratory bird nest is one with viable eggs or live chicks present. We recommend caution when conducting activities near active nests due to the risk of nest failure. Nest failure occurs when a bird, egg, or chick is injured or killed or nest abandonment occurs as a result of the activity. If someone chooses to conduct activities near an active nest, we recommend contacting your local FWS Ecological Services or Regional Migratory Birds office to discuss voluntary best practices that may minimize impacts to nesting birds. To determine if best practices have been developed for specific industries see the USFWS, Migratory Bird Program Webpage at <https://www.fws.gov/birds/management/project-assessment-tools-and-guidance.php>

3. *Is a permit required to destroy an active bird nest?*

Yes. A permit is required for the **purposeful** take of an active migratory bird nest, such as active nests removed to resolve a depredation problem or activities that regularly need to intentionally remove or destroy active nests (e.g., purposefully removing nests from a structure such as an electric distribution pole). A permit is **not** required when conducting any activity where migratory birds and/or their eggs and chicks are accidentally killed during the activity (i.e., the intent of the activity is not to kill migratory birds).

Authorization is required to purposefully remove a nest or its contents prior to destruction. When eggs and chicks are in imminent danger of death from a lawful activity, there is a Good Samaritan provision that allows the collection of the nest contents without a permit for one-time, irregular, or highly infrequent occurrences. For frequent, regular occurrences of purposeful removal of an active nest or its contents, a Special Purpose permit may be appropriate. See the Destruction and Relocation of Migratory Bird Nests Memorandum for further information.

4. *Is a permit required to relocate a nest? When is relocation appropriate?*

Yes. A permit is always required to relocate an active nest, as the nest is in possession while being relocated. The decision to relocate or destroy an active nest is specific for each situation, bird species, and nest status. Some things to consider:

- a. *Are there eggs or chicks?* Relocation is most successful with chicks but rarely so with eggs.
- b. *Where is the nest?* If the nest is on a human-made structure, it may be easier to duplicate nest substrate and relocation may be more successful.
- c. *What is the species and its status?* Certain bird species and individuals are more tolerant to relocation than others.
- d. *Is it humane?* While sometimes counter-intuitive, active nest relocation can be less humane than nest destruction. Death from exposure and starvation is not humane; therefore, it is recommended that any nest relocation be monitored closely to verify adult birds return to attend to the nest and a back-up plan for removing the nest contents be in place. If the choice to relocate has a low chance of success, it is often best to contact a permitted rehabilitator to collect the nest contents and determine the appropriate disposition of those contents (i.e., rearing and release or euthanasia).

5. *How can rehabilitators help?*

Nest relocation or destruction cannot be done under a rehabilitation permit. However, migratory bird rehabilitators may provide technical expertise. Rehabilitators often have experience in nest relocations as well as caring for sick, injured, and orphaned birds in the event that removing nest contents is appropriate. They can provide guidance on whether or not chicks or eggs are likely to survive in a nest relocation attempt or during rehabilitation.

A list of federally-permitted rehabilitators can be found on the National Wildlife Rehabilitators Association webpage (http://www.nwrawildlife.org/?page=Find_A_Rehabilitator). The Service can provide contact information for federally-permitted rehabilitators. The Service does not maintain or provide information on contractors, such as wildlife contractors or pest control companies.

6. What authorizations are available for bird nests?

6.1. Birds in Buildings Regulatory Authorization

The general public, under certain conditions, may remove migratory bird nests from the interior of a building or structure if (i) posing a health threat, (ii) attacking humans, (iii) posing a threat to commercial interests, and (iv) the bird may injure itself. Additional conditions and requirements are detailed in 50 C.F.R. § 21.12(d).

6.2. Good Samaritan Provision

For active nests, an individual or entity whose activity unintentionally or incidentally destroys an active nest, or is likely to do so, may collect the eggs or chicks and temporarily possess them for the purposes of transport to a federally permitted rehabilitator under the good Samaritan authorization in the rehabilitation regulations at 50 C.F.R. § 21.31(a). The Service interprets the definition of "finds" to include finding birds that become sick, injured, or orphaned while conducting activities where the intention is not to kill migratory birds or destroy their nests.

"Finds" also applies when a planned activity is likely to cause or about to cause destruction of an active nest resulting in the death, injury, or orphaning of eggs or chicks because, if nest destruction is imminent, any egg or chick in that nest can be considered orphaned. The Good Samaritan provision applies to one-time, irregular, or highly infrequent occurrences, otherwise a permit is recommended.

6.3. Depredation Permits

Depredation includes agricultural damage, private/public property damage, threats to human health and safety, and threats to recovery of protected wildlife. A depredation permit can authorize active nest destruction or relocation when either the nest itself is causing damage or removal of the nest will relieve a depredation problem. The nest itself or birds attending to the nest must be contributing to physical damage or physical loss to constitute a depredation problem, and must not merely be causing a nuisance.

Applicants must meet depredation issuance requirements, including demonstrating that they have implemented practicable nonlethal measures, such as destroying inactive nests, exclusions, hazing, and habitat modification prior to applying for a permit. For more information see the Fact Sheet on Depredation Permits (<http://www.fws.gov/forms/3-200-13.pdf>).

6.4. Utility Permits

Special Purpose Utility Permits (SPUT) can be issued to utilities with nest concerns. A utility includes, but is not limited to, a business that owns or operates a facility that generates or transmits electricity, gas, oil, water, or communications structures such as cellular towers, microwave transmitters and their related infrastructure, as well as resource development and recovery businesses.

Utility permits can authorize the relocation and/or destruction of nests found on the utility structures when (1) the safety of the migratory birds, nests, or eggs is at risk, or (2) the migratory birds, nests, or eggs pose a threat of serious bodily injury or a risk to human life,

including a threat of fire hazard, mechanical failure, or power outage. This permit does not apply to situations in which birds are merely causing a nuisance or inconvenience, such as construction and routine maintenance, or to eagle nests. This permit also does not apply to clearing an area of active bird nests to reduce the likelihood of collision with infrastructure. For more information see the Fact Sheet for Utility Permits (<http://www.fws.gov/forms/3-200-81.pdf>).

6.5. Scientific Collecting Permits

Scientific Collecting Permits authorize active nest relocation or destruction for scientific research purposes only. The applicant must justify why this is an appropriate methodology for the research question they are seeking to answer. For more information, see the Fact Sheet for Scientific Collecting (<http://www.fws.gov/forms/3-200-7.pdf>).

6.6. Special Purpose Permits

If the activity does not fall into one of the categories above, the applicant may qualify for a Special Purpose permit. The Special Purpose regulation can be used to authorize active nest relocation or destruction when it is consistent with the MBTA for many otherwise lawful activities. The applicant must demonstrate how they meet at least one of the following criteria: (1) a sufficient showing of benefit to the migratory bird resource, (2) important research reasons, (3) reasons of human concern for individual birds, or (4) other compelling justification.

In general, requests for nest relocation or destruction are justified under "sufficient showing of the benefit to the migratory bird resource" (See 6.6.1) or "other compelling justification" (See 6.6.2.).

6.6.1. *What constitutes a sufficient showing of benefit to the migratory bird resource?*

An applicant may demonstrate that there is a benefit to the resource. The migratory bird resource can be the same species or different species as the species for which take is being requested under the permit. Supplemental Information may be requested as part of the application. A single document summarizing the organization's Best Management Practices may be developed by the applicant that includes benefits to the resource (e.g., habitat restoration, native landscaping, etc.), avoidance and minimization practices that will be implemented, and how the decision to intentionally relocate or destroy active nests will be made. While a Best Management Practices summary document is not required, the document can be referenced to streamline permit applications and conditions.

6.6.2. *What constitutes a compelling justification?*

An applicant may also demonstrate that there is a compelling justification that qualifies for a Special Purpose permit. Most commonly, a compelling justification often involves scenarios of multiple competing mandates, such as the MBTA and other federal laws, federal mandates, and/or court orders. Examples of a compelling justification include: a situation where two federal laws conflict (e.g., ESA requirements restrict the activity to only occur during bird nesting season); a critical infrastructure project that may affect human health and safety if not completed on schedule (such as emergency bridge repair); or protection of species of concern that would be harmed if not relocated (such as cavity or burrow nesters that primarily rely on

other species to create burrows). A compelling justification can also include that a planned activity that extends past the Good Samaritan provision (6.2 above) and is likely to cause or about to cause destruction of an active nest resulting in the death, injury, or orphaning of eggs or chicks.

7. What permits can authorize nest take to resolve financial loss?

Permits cannot be issued to resolve financial loss (i.e., construction delays, access to equipment) unless they meet one of the permit types above. If there is physical damage or physical loss in addition to financial loss, a Depredation permit can be issued for the purposeful removal of a nest. If there is solely financial loss, a Special Purpose permit is most appropriate; applicants must demonstrate a sufficient showing of benefit to the migratory bird resource or other compelling justification as described above.

8. What is incidental take and is an incidental take permit available?

On 22 December 2017, the Department of Interior released M-Opinion 37050 (Opinion) regarding whether incidental take (the taking of migratory birds that results from an activity, but is not the purpose of the activity) is prohibited under the Migratory Bird Treaty Act (16 U.S.C. §§ 703-712). The Opinion concludes that "...the MBTA's prohibition on pursuing, hunting, taking, capturing, killing, or attempting to do the same applies only to direct and affirmative purposeful actions that reduce migratory birds, their eggs, or their nests, by killing or capturing, to human control" (M-Opinion 37050, pg. 41). The Opinion clarifies that, under this interpretation, the MBTA does not prohibit the incidental or unintentional take of migratory birds and/or their active nests.

For individuals or entities seeking to voluntarily minimize impacts on migratory birds and their habitat may request technical assistance for suggested best practices can be referred to Service Migratory Bird biologists or Ecological Services offices. To determine if best practices have been developed for specific industries see the USFWS, Migratory Bird Program Webpage at <https://www.fws.gov/birds/management/project-assessment-tools-and-guidance.php>

APPENDIX D

**SITE INSPECTIONS AND BIRD CARE PROTOCOL, AVIAN PROTECTION PLAN
SM ENERGY COMPANY**

APPENDIX D. SITE INSPECTIONS AND BIRD CARE PROTOCOL
AVIAN PROTECTION PLAN
SM ENERGY COMPANY

SITE INSPECTIONS

- 1) The oil and gas production, tank batteries, and drill sites should be patrolled daily to look for injured birds or carcasses. A Site Inspection Checklist to be used by SME personnel is provided at the end of this appendix. If a bird is found, SME personnel must contact the SME Bird Incident Control Operator and not handle the bird. If directed and approved by the USFWS, the injured or entrapped birds may be retrieved or transported. Living birds may be rehabilitated (i.e. cleaned) only following USFWS-approved protocols. Dead migratory birds do not need to be reported to USFWS; however, carcasses should be properly retrieved and disposed of per instruction by the SME Bird Incident Control Operator. Once at the site, the following actions should be performed:
 - a) The site should be examined for leaks, spills, seepage, or drips. This includes examining open pits and tanks for the visible presence of oil, sheen, or other harmful chemicals as well as torn netting or sagging mylar strands.
 - b) Any open water and shoreline should be observed for bird activity, injured birds, and carcasses. Report the presence of birds (alive or dead) to the SME Bird Incident Control Operator.
 - c) Inspect each secondary containment tank or structure at the site. Secondary containment structures must be kept clean, dry, and/or protected such that birds cannot enter them. This includes containment structures or tanks that are out of service or otherwise not currently in use, as well as those that are currently in use.
 - d) Do not touch sick, injured, or contaminated birds. If such birds are observed on the site, immediately call the SME Bird Incident Control Operator. They will contact USFWS for instruction. Handling and transport of live or injured migratory birds requires special permits, and SM Energy does not have these permits. Be prepared to describe the condition of the bird in the greatest detail possible to the SME Bird Incident Control Operator.
 - e) Verify there are no injured birds under electrical wires or around the site.
 - f) Verify there are no birds trapped in buildings or within berms or other containments.
 - g) Verify that netting or other exclusionary measures are intact by performing visual inspections of netted reserve pits or open-top tanks to ensure that birds and other wildlife cannot contact oily fluid, solvents, or chemicals (e.g., examine netting for holes or gaps, or sagging into pit fluid). This includes inactive or out-of-service tanks or pits as well as those in current use.
 - h) A bird patrol should be conducted if there is oil or other fluids potentially hazardous to birds in the pits.
 - i) Birds can be spotted resting along the shore. Oiled birds are harder to detect as they may match the sediment/vegetation. In particular, look in downwind areas where weak birds may be blown by wind.
 - ii) Staffing and patrol frequency is determined as well by number of morbid or oiled birds relative to dead birds. If many morbid or oiled birds are observed, more staff are needed to work on retrieval.
 - i) All carcasses should be photographed in place. Report injured or dead birds immediately to the Bird Incident Control Operator.

APPENDIX D. SITE INSPECTIONS AND BIRD CARE PROTOCOL
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- j) Active nests must not be purposefully disturbed, damaged, removed, or destroyed. Active bird nests are those that have adults present, eggs or chicks, fresh nest material, or birds present in the immediate vicinity. During spring and summer months, assume that any nest is potentially active. During fall and winter months, nests are typically inactive. Inactive nests, unless they are eagle or threatened or endangered species nests, may be removed. If it is uncertain what species built the nest, the nest should not be disturbed. Report any nests on the site to the Bird Incident Control Operator for further instruction.
- 2) Corrective action should be implemented should the site inspection indicate an incident or potential incident is occurring. This includes immediate cleanup and removal/containment of spilled oil or other harmful chemicals, or repair of damaged bird protection measures (i.e., netting, anti-perching devices, hazing devices). If leaks are observed, repair of valves, pipelines, or other equipment leaking oil or other harmful chemicals should be immediately performed by qualified personnel unless there is an imminent safety hazard. The incident must be promptly reported to the Bird Incident Control Operator.

BIRD CARE PROTOCOL

If permission is given by the SME Bird Incident Control Operator, live impacted birds should be captured using care not to unduly stress the bird. Put nitrile gloves on to prevent chemical exposure to the handler. If the bird is large, has sharp talons (e.g., raptors) or a sharp beak (e.g., grebes), put on leather gloves over the nitrile gloves to prevent physical injury to the handler.

- a) Firmly hold the bird but do not apply pressure as their bones are fragile and they are already stressed. Use a light handshake gesture to apply pressure.
- b) Hold their wings close to their body to keep them calm. Keep them away from your face, as they will strike.
- c) Place them gently into a box for transport or wrap in soft rags and hold them if you are not driving.
- d) **IMPORTANT** - Keep the box inside the vehicle for warmth – the greatest immediate stress for these birds is hypothermia.
- e) Repeated hazing (scaring, bothering) is stressful for birds. If it appears that they will escape into the water before you can reach them, back off and come back later. If available, use a boat to coax the bird back onto shore where it can be picked up by another staff member.
- f) Walk slowly towards a bird. It helps to have another person approach from the other side. If possible, walk towards the bird between it and the water.
- g) Report birds found on site immediately to the Bird Incident Control Operator, who will confer with the USFWS, and notify the appropriate personnel and direct care of the bird until trained staff can arrive.

LIVE BIRD CARE BY REHABILITATORS

Birds can be taken to the regional avian rehabilitators (e.g. USFWS), or contact SME contractors handling avian issues and an avian technician will be supplied. A list of appropriate bird rehabilitation centers will be identified

APPENDIX D. SITE INSPECTIONS AND BIRD CARE PROTOCOL
AVIAN PROTECTION PLAN
SM ENERGY COMPANY

with the help of USFWS and disseminated to the appropriate personnel. The following procedure will be followed when cleaning birds.

- a) Record information (date, location collected, species, time) in logbook.
- b) Wear rubber or latex elbow gloves and safety goggles or face shield.
- c) Place bird in large tub of warm (85-90°F) water with Dawn detergent, 1%.
- d) Gently swirl water around bird. Use fingers to gently remove oily material. Do not scrub with a brush; use a soft rag if necessary to avoid damaging flight feathers. Cotton balls may be used on the face, and a soft toothbrush on the head, beak as needed. Use a q-tip to remove oily material from within mouth.
- e) When water gets dirty, transfer bird to a new bucket/tub of warm water.
- f) It may take 10 – 15 buckets/tubs of soapy water to remove oil or staining from the birds feathers.
- g) Then rinse the bird thoroughly in tubs of warm water (85 - 90° F) until water is clear of soap.
- h) If bird is getting agitated, after washing in 2-3 buckets of soapy water rinse well and place to dry and let it settle down before attempting further cleaning.
- i) Using a soft rag, blot as much water as possible from the bird.
- j) Place bird in holding tank in warm area with bowl of fresh drinking water to dry. Observe frequently but try to avoid undue stress.
- k) If bird does not look clean when dry, repeat procedure.
- l) Give all live captured birds 2-10 mls of Pedialyte® depending on size. Use a child's oral dosing syringe. Do not use grape flavored Pedialyte®, as birds dislike grape flavoring. Hold bird gently by crooking arm around it and open beak with left hand. Drip pedialyte down back of throat with right hand. Watch for swallowing motion of throat.
- m) Observe for signs of cold/stress. If bird begins preening and drinking, and its feathers are dry and clean looking, photograph bird, and contact USFWS for release instructions.

CARCASS RETRIEVAL

- 1) All carcasses should be photographed in-place.
- 2) Call the SME Bird Incident Control Operator for instructions on properly retrieving disposing of bird carcasses.

NEW INCIDENT REPORTING

All new incidents that result in avian harm must be reported to SME Bird Incident Control Operator.

SITE INSPECTION CHECKLIST

The following Site Inspection Checklist should be used by SME personnel when conducting daily inspections.

AVIAN PROTECTION PLAN SITE INSPECTION CHECKLIST

Date: _____

Inspector: _____

Location(s) Inspected: _____

Item	Yes	No	N/A	Comments/Corrective Actions
Are there any dead, injured, or trapped birds within our facilities?				
Are there any active bird nests or other evidence of heavy bird use/activity that are endangered by our operations?				
Are all open tanks, pits, tank battery dikes, and chemical tank secondary containments kept clean from visible oil, sheen, and chemicals, or effectively covered (netting, screens, etc.)?				
Are there any other leaks, spills, or drips to be cleaned up?				
Are any other necessary bird controls in place (hazing devices, witch hats, anti-perching strips, etc.)?				
Any dead, injured, or trapped birds, active bird nests or other high bird activity endangered by our operations, or corrective actions required for bird protection controls must be promptly reported to the Regional SM Bird Incident Control Operator (Regional EHS Manager).				



CORPORATE AVIAN PROTECTION PLAN
SM ENERGY COMPANY

October 2, 2018

Revision 6

Project #: 08Y-005-005

SUBMITTED BY: Trihydro Corporation

1252 Commerce Drive, Laramie, WY 82070

ENGINEERING SOLUTIONS. ADVANCING BUSINESS.

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List of Acronyms

APP	Avian Protection Plan
AST	aboveground storage tanks
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practice
ESA	Endangered Species Act
MBTA	Migratory Bird Treaty Act
SME	SM Energy Company
SPCC	Spill Prevention Control and Countermeasures
T&E	Threatened and Endangered
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

This Avian Protection Plan (APP) has been developed to assist SM Energy Company (SME) in protecting avian species with regard to U.S. Fish and Wildlife Service (USFWS) regulations. SME conducts oil and gas well drilling in two regions in Texas including the Permian and South Texas / Gulf Coast (Figures 1 and 2). This APP covers operations and activities within the SME Regions associated with:

- Oil and gas well drilling
- Oil and gas well completion
- Oil and gas well operations

This APP covers operations and activities in which SME exercises direct and/or supervisory control over its employees and contractors. Activities where SME has a royalty or working interest, or is not the designated operator, are outside of the scope of this APP.

1.1 PURPOSE

This plan provides technical guidance for managing avian protection at well sites within the SME Regions. This APP is designed to identify operational hazards to birds, engineering controls to manage site-related chemical and physical hazards to birds, and bird behavior that could increase the potential hazard (e.g., migration patterns and nesting). Additionally, this APP assists SME in minimizing bird incidents based on current knowledge of site operations and potential impacts to avian health.

1.2 COMPANY POLICY

This APP has been written to align with SME guiding principles and objectives. SME believes it is important to safeguard the environment and protect the health and safety of their employees wherever and whenever they conduct their business operations. This belief begins with the exploratory phase of their operations, and extends through all other phases, including the drilling and completion of wells, production operations, and finally, the sale of their product. SME seeks to affiliate with other businesses that recognize the importance of safeguarding the environment and protecting the health and safety of their employees and anyone else with whom they interact. In consideration of this global company policy, SME will use this APP to educate its employees and guide site activities. The goal of this educational program is to maximize avian protection required under the Migratory Bird Treaty Act (MBTA) and other applicable Federal regulations.

1.3 REGULATORY COMPLIANCE

The primary guiding regulation for this APP is the MBTA. According to the MBTA, it is illegal to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, (or) possess, any migratory bird...for the protection of migratory birds...or any part, nest, or egg of any such bird." (16 U.S.C. 703). MBTA compliance is an ongoing concern because migratory birds move annually through and within the SME regions. Raptors and breeding birds are included in this APP because they also move within and across the regions. In addition, this APP will cover compliance with other Federal regulations that protect avian species. These are the Endangered Species Act (ESA) and the Bald and Golden Eagle Protection Act (BGEPA). The ESA regulates federally protected Threatened and Endangered (T&E) bird species.

For any of these regulations, injured or oiled birds should not be removed or handled in any manner. To do so without permission may be in violation of associated laws and regulations. All bird incidents and observations (i.e. dead birds, living oiled or contaminated birds, sick birds, injured birds) need to be reported to SME's Bird Incident Control Operator, who will then contact the USFWS for cases involving live and/or injured migratory birds. Observations or incidents involving dead migratory birds resulting from incidental take (i.e. cases where take of migratory birds is not the purpose of an action) do not need to be reported to the USFWS per the December 22, 2017 Solicitor's Opinion M-37050 "The Migratory Bird Treaty Act Does Not Prohibit Incidental Take" (USDOJ 2017). Opinion M-37050 concludes that the MBTA's prohibitions on taking or killing only apply to affirmative actions that have as their purpose the taking or killing of migratory birds, their nests, or their eggs. Therefore, incidental take of migratory birds, nests, or eggs is not considered unlawful. However, possession of nests or bird parts, including deceased birds, is prohibited under the MBTA. USFWS guidance on the recent M-Opinion affecting the MBTA (USFWS 2018a) and Migratory Bird Nest Destruction and Memo (USFWS 2018b) are included in Appendix B and C, respectively. Any incidents involving an injured or deceased eagle or T&E species must be reported to the USFWS. The BGEPA prohibits the incidental take of eagles including disruption of breeding activities and possession of eagle feathers or other parts without a permit.

This APP is written to address avian protection issues outlined in the April 9, 2010 correspondence from the U.S. Department of Justice (DOJ 2010). This document addresses risk-reduction measures such as best management practices (BMPs) and provides deterrent methods to minimize contact with site stressors, such as oil and hazardous site-related chemicals.

1.4 TRAINING

Training is a critical element of an APP. Training will cover the following components:

- Need for the APP at SME oil and gas exploration and production facilities

- Proper inspections to ensure compliance with the APP
- Protocols for reporting avian mortality or injury
- BMPs to prevent bird mortality or injury at oil and gas exploration and production facilities

Training will be provided to new personnel to ensure that new employees and contractors are trained. An annual refresher will be required for previously trained staff.

2.0 AVIAN PROTECTION AND OVERVIEW

There are several factors to consider when evaluating the potential for avian incidents. Among them is understanding where and when these incidents are most likely to occur. Often, avian incidents are less likely to occur during the actual drilling process because there is extensive human and mechanical disturbance.

2.1 FACTORS CONTRIBUTING TO BIRD INCIDENTS

Following well drilling, completion and equipment (e.g., drilling rig) removal from the well pad, the open pit may attract birds. In order to predict potential risks to migratory birds, the following information should be identified at each SME location:

- Identification of high bird use areas
- The construction by birds of nests on oil and gas facility equipment, such as tank batteries
- Existence of adjacent wetlands
- Visual indication of prey populations that may attract raptors to the facilities (e.g., prairie dog towns)
- Perch availability
- Effectiveness of existing APP procedures
- Any other factors that can increase bird interactions with oil and gas facilities

Birds may mistake open reserve pits for natural surface water features and attempt to utilize them for drinking, resting, and feeding. Birds are attracted to invertebrates in reserve pit fluids and in secondary containment around chemical tanks. Any residual oil on the open pit or in secondary containment could coat a birds' feathers, which could lead to hypothermia, starvation, dehydration, exhaustion, and death. Open pits offer only a limited attraction for waterfowl and other migratory birds due to human presence, ongoing activity, and noise. However, this statement may not be true when other nearby water sources are absent, thus making the available pit attractive to migrating or nesting birds. The longer an unprotected pit containing drilling fluids is left open on site, the greater the probability that birds will utilize the pit. Other factors that can contribute to bird incidents include entrapment within buildings or asphyxiation from flare off-gassing.

This APP includes activities in the South Texas/Gulf Coast and Permian regions of Texas. The Texas protocol is provided in Appendix A of this APP. The following Texas regulations apply for managing pits associated with oil and gas development:

- The drilling operator is required to skim oil from the top of a pit, and if the operator does not comply within 12 months, the operator must net the pit.
- An operator must screen, net, cover, or otherwise render harmless to birds open-top storage tanks that are greater than eight feet in diameter and contain a continuous or frequent surface film or accumulation of oil, skimming pits, and collecting pits that are used in skimming pits.

2.1.1 MIGRATION

Seasonal migratory patterns should be considered when evaluating the appropriate avian-protection measures. Migratory periods typically occur in spring and fall. Migration introduces the potential for many waterfowl and other migratory avian species to be moving and searching for water bodies on which to rest, drink, and feed. Figures 1 and 2 present a generalized overview of major migratory routes within the SME regions relative to existing development operations. These routes are used by ducks, geese, and other migratory birds (Lincoln et al. 1998).

There are latitudinal movements of birds throughout the year. Some species begin fall migration in early August while others do not move until winter. Some species do not migrate until lack of food or severe weather triggers movement (Lincoln et al. 1998). The migratory period varies by weather and year.

2.1.2 NESTING BIRDS

Nesting and breeding activities should also be considered when evaluating the appropriate avian-protection measures to be implemented on SME properties. Direct and purposeful actions that result in the destruction or removal of an active migratory bird nest or eggs are considered a "take" under the MBTA. Take of migratory birds, nests, or eggs is not considered unlawful in cases where the take is not the purpose of or is incidental to the activity. Note that this applies to migratory songbirds, waterfowl, shorebirds, or raptors. However, some unoccupied nests are legally protected by statutes other than the MBTA, including nests of threatened and endangered migratory bird species and bald and golden eagles, within certain parameters.

Where operations intersect with areas identified as important to birds, greater care should be used to identify active nests. Oiled birds can carry oil on their feathers back to the nest, where contact of the oiled feathers can harm the egg. Therefore, care should be given during the nesting season to minimize oil exposure pathways. Where possible, avoid disturbing any active bird nest on the ground, in or on a man-made structure, and in or on a natural feature such as a

shrub or tree. If activities are to be conducted near an active migratory bird nest, the USFWS recommends contacting the local USFWS Ecological Services or Regional Migratory Birds office to discuss voluntary best practices that may minimize impacts to nesting birds (USFWS 2018b) (Appendix C).

Depending on the species, nesting begins in late February in the South Texas / Gulf Coast and Permian regions (Kast et al. 1998). Eggs are typically found in the nests beginning in March, and nesting continues throughout the summer until mid-July or August (Kast et al. 1998). Nesting periods depend on the location, elevation, and species present.

3.0 OPERATIONS

This section describes the potential operational hazards to birds present at the SME regional well locations. The hazards were identified based on site visits and ongoing discussions with SME personnel. Avian-protection measures are discussed in Section 4.0.

3.1 SITE-RELATED CHEMICAL AND PHYSICAL HAZARDS

The presence and concentration of chemicals, as well as physical hazards, were evaluated when developing this APP. There are many potential site-related chemical and physical hazards that may be present during oil and gas development and operations (Table 1). Drilling fluids or drilling muds consist of a base fluid that may contain water, diesel, mineral oil, or a synthetic compound. They also contain weighting agents (typically barium sulfate, barite, or hematite) and bentonite clay to increase viscosity and line the borehole walls. Iron oxide, aluminum bisulfate, zinc carbonate, and zinc chromate are used as corrosion inhibitors (Occupational Safety and Health Administration [OSHA 2010]). Drilling fluids may also contain dispersants including lignosulfonates and lignites, which keep the mud in a fluid state (OSHA 2010). Surfactants (e.g., fatty acids and soaps) are used to defoam and emulsify the mud. Biocides, consisting of organic amines, chlorophenols, and formaldehydes, are used to kill bacteria and reduce souring of drilling mud.

Listed below are the different types of drilling fluids that may be used depending on conditions encountered (OSHA 2010).

- Water-based muds:
 - Water-based muds are typically used by SME due to their lower environmental impact and cost.
- Non-aqueous fluids:
 - Oil-based fluids are used in wells where drilling is more difficult and water-based muds do not perform as well such as deep wells, horizontal and extended-reach wells, and wells drilled in reactive shales (USFWS 2009). Oil-based fluids can contain crude oil, diesel, and mineral oils, and can have aromatics ranging from 0.5 to 35 percent (International Petroleum Industry Environmental Conservation Association/ International Association of Oil & Gas Producers [IPIECA/OGP] 2009).
 - Synthetic-based fluids, also known as Group III fluids (low/negligible-aromatic content fluids), use non-aqueous oil-based non-petroleum fluids as their base, and include various types of hydrocarbons such as olefins, ethers, vegetable esters, linear alkylbenzenes, and synthetic paraffins (OSHA 2010). Synthetic-based muds have drilling properties similar to those of oil-based fluids but do not have polynuclear aromatic

hydrocarbons (PAHs), are less toxic, biodegrade faster, and have a lower bioaccumulation potential (USFWS 2009). Synthetic fluids have <0.5% total aromatics and <0.001% PAHs (IPIECA/OGP 2009).

When the reserve pit contains petroleum hydrocarbons, the risk of bird mortality is elevated (USFWS 2009). Other compounds that may be harmful to birds include surfactants, hydrochloric acid, caustic soda (sodium hydroxide), and salts. Oil, diesel, and high brine concentrations that coat feathers are considered an acute (immediate) hazard. Other chemicals in the fluids may cause either acute or chronic hazards to birds that utilize the pits as a drinking water source. Table 2 presents a summary of potential chemical hazards of major components in drilling fluids.

General water quality for SME pit waters is anticipated to vary based on the chemistry of geologic formations encountered during drilling, as well as by pit type. Because pit waters can pose an acute and/or chronic risk to birds, the protective measures described within this APP will be implemented, if necessary.

3.2 RESERVE PITS

Reserve pits are excavated areas adjacent to drill rigs, which are utilized for the storage, and in some states, disposal of well cuttings and drilling fluid. Pit contents are dependent on the type of drilling fluids used, geologic formations encountered, and chemicals added during the drilling process. Pit contents, including oil and chemicals, can be detrimental to bird health.

SME's reserve pits are typically uncovered and therefore available for contact by birds during the 10- to 60-day drilling and completion operation. Reserve pit materials are typically dewatered within 30 days and closed within 90 days of finalizing drilling and completion activities, but the process may take up to one year. Minimizing the time that the pits are active and contain fluids reduces the potential for avian hazards. If the presence of oil or evidence of toxicants within the water is observed, engineering controls should be implemented as soon as possible to reduce the potential for injury to avian species.

When high levels of human activity are present, additional mitigation measures may not be necessary. As stated in Section 2, there is extensive human activity during the actual drilling process, and open pits may offer only a limited attraction for waterfowl and other migratory birds due to human presence and noise. During drilling, noise levels can exceed 85 decibel (dB) near the drill rig. Observations of active drill sites at different SME operations suggests that avian activity on an active drill pad is minimal. However, not all species may be deterred by human activity. If the drill site is in an area of high bird activity, bird-protection devices and BMPs should be employed to avoid impacting birds. A more detailed discussion of the impact of human activity is presented in Section 4 of this APP.

3.3 CLOSED-LOOP DRILLING

An alternative to the use of open, earthen reserve pits is a closed-loop drilling system comprised of steel tanks to hold the drilling muds and cuttings. Closed-loop drilling utilizes equipment to physically separate the drilling fluids from the cuttings. The drilling fluids are recycled in the steel tanks, and the cuttings are dried prior to disposal. Closed-loop systems may require an emergency discharge pit to contain unplanned releases. SME has initiated closed-loop drilling practices when the use of a reserve pit is not a viable option. If the presence of oil or evidence of toxicants within the water in an emergency discharge pit is observed, and the water cannot be immediately removed, engineering controls should be considered to reduce the potential for injury to avian species.

3.4 FLARE STACKS AND PITS

SME uses flare stacks to incinerate waste gases, primarily methane and hydrogen sulfide, produced from the wells. Earthen flare pits are constructed below the flare stacks to contain inadvertent liquid releases. If the presence of oil or evidence of toxicants within water in these flare pits is observed, and the water cannot be immediately removed, engineering controls should be considered to reduce the potential for injury to avian species. Flare stacks may be used by birds for perching or roosting, which could cause injury or death to birds due to incineration or inhalation of gases. Devices to minimize the potential for perching on the flare stacks, as well as protection on the flare pit, should be installed. Active flare stacks that run continuously would not attract birds; such stacks would require engineering controls only if high bird activity was noted in the area and there were devices birds could use for perching near the stack. This would protect birds in the event of a sudden increase in the flare volume/size.

3.5 FLOWBACK WATER PITS

Hydraulic fracturing is used to enhance permeability within a formation to stimulate production of oil or gas. The fracturing process includes pumping fluids (99 percent water) at a high pressure to cause the formation to fracture. When the fracturing is complete, pressure is released and the fracturing fluid and formation gas and liquids are allowed to flow back to the surface, with the water flowing into frac tanks. The flowback water may then be placed into a lined surface impoundment. Flowback water may be toxic to avian species due to high levels of salinity, surfactants, petroleum hydrocarbons, or other harmful chemicals. If the presence of oil or evidence of toxicants within the water is observed, engineering controls should be considered to reduce the potential for injury to avian species.

3.6 PRODUCED WATER PITS

Oil and gas production operations often produce water along with the hydrocarbons. Produced water can range from slightly brackish to brine and can contain salt, hydrocarbons, and residual volumes of well-stimulation chemicals that may be toxic to avian species. Additionally, inefficient separation of oil from the produced water can result in oil or

sheens in the produced water. Storage of produced water in open pits or open-topped tanks can pose a risk to birds if it contains oil, sheens, or harmful quantities of well-stimulation chemicals. The produced water may be pumped into earthen pits or above ground steel tanks. If the presence of oil or evidence of toxicants within the water is observed, engineering controls should be considered to reduce the potential for injury to avian species.

3.7 FRESHWATER FRAC PONDS AND SOURCE WATER PITS

Freshwater frac ponds are used to store surficial runoff from precipitation events for use in the drilling and/or fracturing process. These large ponds are usually lined and are generally open year-round to store the water until it is needed. Water captured from surface runoff is considered non-toxic to avian species. Source water pits are used to store surface water or groundwater that is pumped from water supply wells for use in the drilling and/or fracturing process. These large pits are usually lined and are generally open year-round to store the water until it is needed. Water recovered from the wells is considered non-toxic to avian species because it has not been utilized for site activities, but it could naturally be saline or contain heavy metals and/or other elements present in the geologic formation. If the presence of oil or evidence of toxicants within the water is observed, engineering controls should be considered to reduce the potential for injury to avian species.

3.8 SECONDARY CONTAINMENT FOR ABOVEGROUND STORAGE TANKS AND DRUMS

Secondary containment for aboveground storage tanks (AST), both in- and out-of-service, generally consists of earthen berms. In addition, 55-gallon drums stored on-site may also have secondary containment generally consisting of plastic or metal catch basins. These secondary containment structures collect liquid associated with spillage or seepage from the tanks or drums, and precipitation. The liquid within these secondary containment structures could negatively impact birds if it contains oil or other chemicals, or the birds could become trapped and drown. If the presence of oil or evidence of toxicants within the water is observed, and the water cannot be immediately removed, engineering controls should be considered to reduce the potential for injury to avian species.

The secondary containments for small chemical/fuel tanks/totes at the SME production facilities have been found to be a primary hazard to birds from operations. It is critical that these secondary containment structures are kept clean, dry, and/or protected such that birds cannot enter them.

3.9 ON-SITE BUILDINGS OR EQUIPMENT

Birds typically enter building openings (e.g. vents) or cavities such as those at the base of some oil-water separators to nest. They can become entrapped in buildings and die due to stress or heat exhaustion. Nests could be in the way of maintenance activities, and also encourage birds to remain on the site where they are inherently at a higher risk of

exposure to site activities than in their natural habitat. Exclusion engineering controls should be incorporated to prevent birds from entering buildings or holes/cavities in equipment in cases of high bird activity or use.

3.10 POWERLINE CONNECTIONS TO METER BOXES

Avian species are subject to electrocution or collision with power lines, which could result in injury or death. SME is not responsible for maintaining power lines in all regions. However, at some locations the power line is the responsibility of SME. In addition, the feeder line that connects the meter boxes to the power lines is the responsibility of SME. Any power lines that are SME's responsibility should be protected with permanent devices to minimize the potential for birds to land or perch, if the possibility of shock exists.

3.11 LEAKS AND SPILLS

Small drips and spills may occur as a result of site-related activities. Small puddles of oil or other chemicals may result from faulty hose or pipe connections, leaking equipment, or leaking valves. Puddles of oily fluid may potentially attract and entrap small songbirds and other avian species. Migratory birds may ingest puddles of oily liquids and be adversely affected. Monitoring should include looking for drips, leaks, and spills. Small leaks, drips, and spills should be contained and leaking equipment and valves should be promptly repaired.

4.0 AVIAN-PROTECTION MEASURES

Avian species that migrate through and nest within the SME regions should be protected from hazards that could cause injury and/or death. The types of protection measures include engineering controls and open pit protection measures, as discussed in the following sections. A summary of the recommended protections for each of the operations is provided in Table 3.

4.1 ENGINEERING CONTROLS

Engineering controls are used to remove a hazard or place a barrier between the birds and the hazard. Well-designed engineering controls can be highly effective in protecting birds, and will typically be independent of operations to avoid compromising operations or worker safety while providing a high level of avian protection. State regulations pertaining to reserve pits for the two regions that SME operates are included as Appendix A.

4.1.1 EXCLUSION

Exclusion devices are constructed to create a physical barrier to the hazard and thereby eliminate the potential of birds coming in contact with the potential hazard. Common forms of exclusion devices include:

4.1.1.1 NETTING

Netting provides a barrier between the avian species and the open water that could potentially contain hazardous chemicals. The netting is usually composed of a nylon or wire material that is woven together to inhibit bird species to access the water below.

4.1.1.2 FENCING

In addition to netting, some states require additional fencing surrounding open water pits to exclude birds from accessing the water. The specific requirements for each state, by SME region, are presented in Appendix A.

4.1.1.3 BIRD BALLS

Bird balls are hollow, plastic floating balls that camouflage the water surface and prevent birds from landing on or drinking the pit water. By placing a sufficient quantity of hollow plastic balls onto the liquid surface, the bird ball blankets automatically arrange themselves into a close-packed formation over the water surface. This high surface coverage provides an extremely effective barrier to birds. The standard practice is to completely cover the fluid surface and continue with bird balls up the sides of the pits to allow additional coverage in case of a rise in the fluid level,

which could result from a heavy rain or melted snow. For areas with high winds, weighted bird balls should be used to prevent the balls from being blown off the pond or pit surface.

4.1.2 ANTI-PERCHING AND ANTI-COLLISION DEVICES

Devices are available to reduce the likelihood of birds perching in areas where a potential hazard exists. A few of these devices are identified below:

- Anti-perching wire consists of nylon-coated stainless steel with a diameter that is too small for most birds to grip. The wires are attached by tension springs to either horizontal or vertical posts. The springs cause the wires to 'bounce' when birds try to land on them; therefore, disorienting the bird and subsequently discouraging them from landing at that particular site.
- Anti-perching spikes are designed to prevent birds from landing on surfaces. The spikes cause unpleasant sitting conditions for the birds, deterring perching in that particular location.

4.1.3 ESCAPE RAMPS

Escape ramps can help protect birds from drowning in steep sided pits or secondary containment tanks. A few types of escape ramps are identified below:

- Escape ramps placed on each side of the pit allow the bird to escape from potential drowning. The ramps consist of a high-traction surface that allows birds to walk out of the pit.
- Ladders, placed at several locations along the pit wall, aid in the prevention of drowning and allow an entrapped bird to escape. The ladders are sloped at a 30 to 40 degree angle and intercept the line of travel within a pit.

4.2 OPEN PIT PROTECTION MEASURES

Open pits warrant protection when they contain fluids that are potentially hazardous to birds. The most effective protective measure for birds at drill sites is to prevent oil spills and prevent oil or other hazardous materials from entering open pits or open-topped tanks. When oil or other hazardous materials do enter open pits or open-topped tanks, the preferred options include either the immediate removal of such fluids, or netting the pits/tanks. However, situations may exist such that spills and leaks occur at an operating facility, but remediation cannot be performed due to adverse weather or safety conditions. For example, covering tanks or pits that are in use might introduce a safety hazard. A short-term option, such as use of visual hazing deterrents, may be necessary in some circumstances. Visual hazing deterrents may be effective with migratory birds, but are less effective over longer time periods with resident birds. Resident birds become acclimated to an object or other visual stimulus in 3 to 5 days (Gorenzel and Salmon

2008). Thus, visual deterrents, such as flagging, would be ineffective in a reserve pit left open and in place for several weeks or months as allowed by state regulations. Therefore, supplemental techniques or alternate devices may also be necessary for effective hazing over longer time periods. Temporary protection measures are discussed in the following sections.

4.2.1 HAZING

Hazing is an effective measure for temporary open pit protection and is best applied during active migration. Because resident or nesting birds can rapidly acclimate to hazing techniques, this method should be used primarily as a deterrent for migrating birds. Use of multiple hazing methods may be more successful than a single technique. Hazing techniques that can be used prior to netting are as described below.

4.2.1.1 NOISE

There are numerous noise deterrents commercially available (Gorenzel and Salmon 2008). Common devices available from pest control suppliers include:

- Broadcast Calls – these include predator calls and distress calls. Broadcast calls are effective day or night, and there is slower habituation compared to other auditory or visual hazing techniques. The broadcasts are effective at low sound levels and therefore may be less disturbing to nearby residents than other auditory methods. The limitations are that they are species-specific, not all species give alarm or distress calls, and recordings for many species are not available. Therefore, broadcast calls would not necessarily deter all birds.
- Propane Cannons – these devices make a loud booming noise at pre-determined intervals. They must be resupplied with propane and sheltered from the wind to work. To prevent birds from becoming accustomed to the noise, these devices should be moved frequently and are thus somewhat labor intensive. Although propane cannons are effective day and night, periodic cannon blasts may provoke complaints from nearby landowners and residents and also present a potential fire hazard.
- Pyrotechnics – these include bird bombs, screamers, shell crackers, and rockets. They are typically shot from a pistol or shotgun. They should be considered a potential ignition source, and thus they are not recommended for use where there is flammable vegetation or other materials. They require ear and eye protection for personnel using them.

4.2.1.2 VISUAL HAZING

Visual hazing includes the following techniques (Gorenzel and Salmon 2008):

- Mylar® tape or flagging – Mylar® tape, silver on one side and red on the other, is available in rolls of various widths. Flagging consists of sheets of plastic attached to a lath or a wire. It can be installed over a reserve or fracturing pit. Although it is inexpensive, readily available, portable, and easily deployed, the flagging is not as effective at night or during windless conditions.
- Lasers – Some species have shown extreme avoidance to laser beams in field trials. Because lasers are effective at night and are silent, they are good for locations where noise would be a disadvantage or disruptive to adjacent property owners. However, lasers may not be effective during the day, they are relatively expensive, and a human operator is required. As a safety precaution, the potential for lasers to act as ignition sources should be evaluated if this option is considered.
- Balloons – Balloons with a reflective coating can startle birds. Balloons are also available with eye spots that may deter birds. Balloons deflate after a few days, can tear apart in wind with speeds greater than 15 miles per hour, and are not effective at night. However, they are readily available and inexpensive.
- Lights – Lights that flash and rotate may deter bird use and are relatively inexpensive. However, lights require a battery and are not effective during the day. As a safety precaution, the potential for battery-operated lights to act as ignition sources should be evaluated if this option is considered.
- Scarecrows – These can be human effigies that mimic a human, plastic predatory birds, or other animals. Mechanical pop-up scarecrows are available that inflate periodically, are illuminated at night, and produce a siren-like noise. Scarecrows are not effective at night unless illuminated, and birds habituate rapidly to a non-moving scarecrow. These devices must be moved frequently, and some may be time-consuming to construct and install. As a safety precaution, the potential for illuminated parts to act as ignition sources should be evaluated if this option is considered.

4.2.1.3 GENERAL DISTURBANCE

High levels of human activity can deter birds from landing. Driving through the area in a truck or on an all-terrain vehicle can serve as a deterrent (Gorenzel and Salmon 2008). Walking can also serve as an avian deterrent. This mitigation method is more apt to be effective when other nearby water sources are present for birds to use.

As previously stated, during the drilling and completion process, there is extensive human activity (i.e. drill rigs, generators, truck traffic, etc.). Because of this, open pits offer only a limited attraction for waterfowl and other migratory birds. However, not all species may be deterred by human activity. If the drill site is in an area of high bird

activity, additional bird-protection devices and BMPs should be employed to avoid impacting birds. Selection of appropriate devices must consider site conditions to ensure that they are effective, and also not impair worker safety. Where other nearby water sources are absent, open pits present a stronger attraction, and disturbance may not be effective and additional mitigation measures may be required.

5.0 MIGRATORY BIRD TREATY ACT REPORTING REQUIREMENTS

Training is an important element of the APP and for maintaining MBTA compliance. SME will incorporate MBTA awareness and APP obligations into training required for personnel involved in the operations and locations covered under this APP. Appropriate personnel will be properly trained in avian issues identified in this APP. Appendix D contains the proper protocol to follow during site inspections for birds and recovery of live birds or carcasses. It also contains a Site Inspection Checklist to be used by SME personnel. Supplemental training will be conducted as appropriate when there are substantial changes in regulations or internal policies. Training will be required of all newly hired field personnel, as well as annual refreshers. Training will cover the reasons that the APP is required, protocols for reporting avian mortality, and BMPs to prevent migratory bird mortality at oil and gas exploration and production facilities. Training will not be limited to a single session, but will be conducted annually to ensure that new employees and contractors are trained, and previously trained staff is given a refresher.

If an active nest is found where site operations are going to take place, notify the SME Bird Incident Control Operator. The Bird Incident Control Operator will act as the primary contact on a region-by-region basis for avian issues and will notify the USFWS Office of Law Enforcement for assistance, where applicable. Appropriate notification procedures are outlined in Appendix D and regional contact information is presented on Table 4. If a migratory bird carcass or an oiled or otherwise injured bird is found onsite, the SME Bird Incident Control Operator must be notified immediately. For incidents involving eagles and T&E birds (live or deceased), or sick or injured migratory birds, the Bird Incident Control Operator will then call the USFWS Office of Law Enforcement Special Agent for their region (Table 4). This is the appropriate and legal procedure required by the USFWS. Deceased migratory birds do not need to be reported to USFWS in cases of incidental take, which is not explicitly prohibited under the MBTA. Birds should not be moved or nests disturbed until the appropriate contacts have been made and the SME Bird Incident Control Officer has provided instruction as to the appropriate procedure for the situation.

The APP should be reviewed annually by the parties involved in maintaining compliance with the MBTA. The review will address the APP effectiveness and any changes needed to improve its effectiveness. As part of this review, the records collected for bird incidents at various operations throughout the year will be examined to determine the effectiveness of bird protective measures and BMPs in preventing avian mortality and morbidity. This will act as a quality control check on the APP procedures. APP changes will be made in a consistent manner to maintain MBTA compliance.

6.0 REQUIREMENTS FOR OTHER FEDERAL AVIAN PROTECTION REGULATIONS

The ESA and the BGEPA are the two other federal laws besides the MBTA that protect avian species. The ESA protects federal T&E species from “take”, which is defined as any activity which may harm, harass, pursue, hunt, shoot, wound, kill, trap, capture, or collect birds. The level of protection for avian species varies by state. A list of T&E species within each state may be viewed at:

- <http://www.fws.gov/endangered/map/index.html>

The USFWS can be contacted for information pertaining to these special status species within each USFWS region. The regions may be identified, and contact information obtained at:

- <http://www.fws.gov/endangered/regions/index.html>

The ESA is most likely to apply prior to, or during, permitting or construction operations, and not during day to day operations, at existing facilities. By definition, these are not common species found in the environment. Therefore, the likelihood of encountering a T&E species is rare. SME staff should be trained in how to identify T&E species endemic to the project location. Despite the low likelihood that a T&E species will be present at an SME facility, it is possible that a special status species could be injured or killed onsite. Dead or injured T&E birds should not be approached, handled, or removed from the site. Any potential T&E bird species found dead or injured within the boundaries of the site should be reported to the SME Bird Incident Control Operator, who can then contact the USFWS for further instruction.

The BGEPA prohibits taking, possessing, or transporting a bald eagle or golden eagle. It also prohibits taking, possessing, or transporting any of the eagle’s parts, nests, or eggs without prior authorization. This includes inactive nests as well as active nests. Take means to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb. Any activities that directly or indirectly lead to take are prohibited without a permit. This act allows for certain activities such as scientific study and Native American religious purposes. This act defines a “non-purposeful take,” which is an unintentional take that results from an otherwise lawful activity. The following actions are applicable under the BGEPA:

- Do not touch or otherwise attempt to handle a dead eagle.
- Do not harass a living eagle or disturb an eagle nest.

- If a dead eagle is found within the boundaries of a project site, or a bald or golden eagle is observed nesting or roosting near a project site, the SME Bird Incident Control Operator should be contacted.
- For a new project near an eagle nest, or if a nest is being built at an existing project site, the SME Bird Incident Control Operator may apply for a non-purposeful take.
- If project activities may disturb roosting or foraging eagles, the Bird Incident Control Operator will contact the local USFWS for advice and recommendations for how to avoid such disturbance and whether a permit is necessary.

For More Information

Questions about the Permit to Non-Purposefully Take Bald Eagles or the permit process, or for questions about Bald and Golden Eagle permits, should be directed to the local USFWS contact person for further instruction (<http://www.fws.gov/midwest/MidwestBird/EaglePermits/contactus.html>). Other than the Permit for the Non-Purposeful Take of Bald Eagles and the Permit to Remove or Relocate and Eagle Nest, the following office should be contacted for additional information:

Migratory Birds Permit Office
U.S. Fish and Wildlife Service
5600 American Blvd. West, Suite 990
Bloomington, MN 55437-1458
Phone: (612) 713-5436

7.0 REFERENCES

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- USFWS. 2018b. Destruction and Relocation of Migratory Bird Nest Contents: Memorandum from the Assistant Director, Migratory Birds. Available online: <https://www.fws.gov/policy/a1m0407.pdf>.
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TABLES

TABLE 1. SUMMARY OF POTENTIAL BIRD HAZARDS DUE TO SITE OPERATIONS
AVIAN PROTECTION PLAN
SM ENERGY COMPANY

Operation Type	Concern	Exposure Scenario	Typical Wastes	Birds Likely to Be Affected
Open Tanks	Liquids, Entrapment, Toxicity	Birds are attracted to water and will attempt to land. For waterfowl, this is more likely during periods of peak migration, and where operations occur near major migration corridors. However, waterfowl or other migratory birds may also be found far from migration corridors or during periods when migration is not expected. Passerines may utilize the tank for a source of drinking water. Constituents in water at concentrations likely to be toxic, or constituents that produce an immediate physical hazard such as hypersaline water or oily waste, may trigger a bird incident by killing or injuring the bird.	Oil	Waterfowl
			Brine	Waterfowl
			Other chemicals (Barium, detergents, emulsifiers)	Waterfowl Passerines
Freshwater Pits	Liquids, Entrapment, Toxicity	Birds are attracted to water and will attempt to land. For waterfowl, this is more likely during periods of peak migration, and where operations occur near major migration corridors. However, waterfowl or other migratory birds may also be found far from migration corridors or during periods when migration is not expected. Passerines may utilize the tank for a source of drinking water. Constituents in water at concentrations likely to be toxic, or constituents that produce an immediate physical hazard such as hypersaline water or oily waste, may trigger a bird incident by killing or injuring the bird.	Oil	Waterfowl
			Brine	Waterfowl
			Other chemicals (Barium, detergents, emulsifiers)	Waterfowl Passerines (songbirds)
Bermed Areas	Liquids, Entrapment, Toxicity	Bermed areas can contain a spill, or collect precipitation that combines with residual chemicals in soil or from spills/leaks/other releases. Birds are attracted to water and will attempt to land. For waterfowl, this is more likely during periods of peak migration, and where operations occur near major migration corridors. However, waterfowl or other migratory birds may also be found far from migration corridors or during periods when migration is not expected. Passerines may utilize the bermed area for a source of drinking water. Constituents in water at concentrations likely to be toxic, or constituents that produce an immediate physical hazard such as hypersaline water or oily waste, may trigger a bird incident by killing or injuring the bird.	Oil	Waterfowl
			Brine	Waterfowl
			Other chemicals (Barium, detergents, emulsifiers)	Waterfowl Passerines - (perching birds or songbirds)

Note:

NA = Not Applicable

TABLE 1. SUMMARY OF POTENTIAL BIRD HAZARDS DUE TO SITE OPERATIONS
AVIAN PROTECTION PLAN
SM ENERGY COMPANY

Operation Type	Concern	Exposure Scenario	Typical Wastes	Birds Likely to Be Affected
Reserve Pit	Liquids, Entrapment, Toxicity	Birds are attracted to water and will attempt to land. For waterfowl, this is more likely during periods of peak migration, and where operations occur near major migration corridors. However, waterfowl or other migratory birds may also be found far from migration corridors or during periods when migration is not expected. Passerines may utilize the pit for a source of drinking water. Constituents in water at concentrations likely to be toxic, or constituents that produce an immediate physical hazard such as hypersaline water or oily waste, may trigger a bird incident by killing or injuring the bird.	Oil	Waterfowl
			Brine	Waterfowl
			Other chemicals (Barium, detergents, emulsifiers)	Waterfowl Passerines (Songbirds)
Flare Stacks and Pits	Liquids, Incineration	Flare pits may collect rainwater and snowmelt. Birds may roost on flare pits. Birds are attracted to water and will attempt to land. This is more likely to affect waterfowl during periods of peak migration, and where operations occur near major migration corridors. However, waterfowl or other migratory birds may also be found far from migration corridors or during periods when migration is not expected. Nesting birds could use equipment on which to construct a nest, or territorial displays. A flare could incinerate individuals in the nearby area.	Oil	Raptors (owls, hawks, falcons, eagles) Waterfowl Passerines (songbirds)
			Gas Condensate	Raptors (owls, hawks, falcons, eagles) Waterfowl Passerines (songbirds)
Freshwater Flowback Pits	Liquids, Incineration	Birds are attracted to water and will attempt to land. For waterfowl, this is more likely during periods of peak migration, and where operations occur near major migration corridors. However, waterfowl or other migratory birds may also be found far from migration corridors or during periods when migration is not expected. Passerines may utilize the pit for a source of drinking water. Constituents in water at concentrations likely to be toxic, or constituents that produce an immediate physical hazard such as hypersaline water or oily waste, may trigger a bird incident by killing or injuring the bird.	Oil	Raptors (owls, hawks, falcons, eagles) Waterfowl Passerines (songbirds)
			Gas Condensate	Raptors (owls, hawks, falcons, eagles) Waterfowl Passerines (songbirds)
Freshwater Frac Ponds	Liquids, Entrapment, Toxicity	Birds are attracted to water and will attempt to land. For waterfowl, this is more likely during periods of peak migration, and where operations occur near major migration corridors. However, waterfowl or other migratory birds may also be found far from migration corridors or during periods when migration is not expected. Passerines may utilize the tank for a source of drinking water. Constituents in water at concentrations likely to be toxic, or constituents that produce an immediate physical hazard such as hypersaline water or oily waste, may trigger a bird incident by killing or injuring the bird.	Oil	Waterfowl
			Brine	Waterfowl
			Other chemicals (Barium, detergents, emulsifiers)	Waterfowl Passerines (songbirds)

TABLE 2. SUMMARY OF POTENTIAL CHEMICAL HAZARDS OF MAJOR COMPONENTS IN DRILLING FLUIDS
AVIAN PROTECTION PLAN
SM ENERGY COMPANY

Category	Chemical Names	Potential Avian Hazard	Likely Avian Route of Entry	Target Organ	General Toxicological Data	Source
Surfactants	Various names	Feathers – reduces insulating properties, water repellency	Direct contact	Exposure may result in hypothermia, lack of buoyancy	Low toxicity. Skin, eye, respiratory irritants.	USFWS, 2009
Sheen	Various petroleum hydrocarbons	Feathers – reduces insulating properties, water repellency. Toxicity due to ingestion.	Direct contact, ingestion, carried on parents feathers as indirect pathway to eggs	Exposure may result in hypothermia, lack of buoyancy, toxicity to bird or eggs	See crude oil and diesel.	USFWS, 2009
Dispersants	Polyacrylates, lignosulphonates, tannins	Unknown	Direct, oral	Skin, eye, lungs	Low toxicity. Lignosulphonates have oral LD50 > 2 g/kg; NOAELs about 1 g/kg/d. Skin, eye, respiratory irritants. Tannins low acute toxicity.	IPIECA/ OGP, 2009
Emulsifiers	Soaps, amines, imidazolines, polyamides	Could remove natural oils from feathers	Direct, oral	Skin, eye	Eye and skin irritants	IPIECA/ OGP, 2009
Crude oil	Various petroleum hydrocarbons: aliphatic, alicyclic, and aromatic hydrocarbons. It may also contain small amounts of nitrogen, oxygen and sulphur compounds.	Feathers – reduces insulating properties, water repellency. Toxicity due to ingestion.	Direct contact, ingestion, carried on parents feathers as indirect pathway to eggs	Exposure may result in hypothermia, loss of buoyancy, toxicity to bird or eggs	Crude oil is of low acute toxicity with dermal and oral LD50 values greater than 2000 mg/kg. Inhalation toxicity expected to be low. Light crude oils may pose an aspiration hazard and may also cause symptoms of central nervous system depression. Upon repeated exposure, some light crude oils may cause skin dryness or cracking.	IPIECA/ OGP, 2009; USFWS, 2009
Diesel	Straight and branched chain alkanes (paraffins), cycloalkanes (naphthenes), aromatic hydrocarbons and mixed aromatic cycloalkanes (cycloalkanoaromatics), mainly 2 and 3-ring or low-molecular weight PAHs. Use of fluids containing heavier atmospheric, vacuum or cracked components is likely to result in an increase in the content of 4 to 6-ring PAHs.	Likely to be the same as crude oil, above.	Likely to be the same as crude oil above.	Likely to be the same as crude oil above.	Skin exposure will remove natural fats; repeated or prolonged exposure can result in drying and cracking, irritation and dermatitis. Diesel fuels may contain 10% (w) or more PAH's.	IPIECA/ OGP, 2009
Highly refined mineral oil	Mineral oil	Unknown	Direct, oral	NA	Low acute toxicity; not irritating or reprotoxic.	IPIECA/ OGP, 2009
Synthetic paraffin	Synthetic paraffin	Unknown	Direct, oral	NA	Low acute toxicity; not irritating or reprotoxic.	IPIECA/ OGP, 2009
Linear alpha olefins	Linear alpha olefins	Unknown	Direct, oral	Skin, eyes	Low toxicity upon acute oral, dermal and inhalation exposure. Alpha olefins are slightly irritating to the skin and eyes of rabbits. Low toxicity(kidney), are not neurotoxin, produce no adverse effects on reproduction or fetal development.	IPIECA/ OGP, 2009
Internal olefins	Olefins (alkenes) ranging in carbon number from C6 to C24, alpha (linear) and internal (linear and branched)	Unknown	Direct, oral	None	Low mammalian acute toxicity by the oral, inhalation and dermal routes of exposure. Repeated-dose studies indicate low toxicity in rats. Not neurotoxin. Not expected to cause reproductive or developmental toxicity. Not eye irritants or skin sensitizers. Prolonged exposure of the skin for many hours may cause skin irritation. The weight of evidence indicates alpha and internal olefins with carbon numbers between C6 and C24 have a similar and low level of mammalian toxicity. Toxicity not affected by location of the double bond or the addition of branching to the structure.	IPIECA/ OGP, 2009

TABLE 2. SUMMARY OF POTENTIAL CHEMICAL HAZARDS OF MAJOR COMPONENTS IN DRILLING FLUIDS
AVIAN PROTECTION PLAN
SM ENERGY COMPANY

Category	Chemical Names	Potential Avian Hazard	Likely Avian Route of Entry	Target Organ	General Toxicological Data	Source
Inorganics						
Barite	BaSO ₄	Unknown	Direct, oral	Skin, eye	Skin irritant, eye irritant, low oral toxicity. Toxicity varies by salt. Barite (BaSO ₄) not absorbed across GI tract; nontoxic.	IPIECA/ OGP, 2009
Brine	Various salts and formates (KCl, NaCl, NaCOOH, CaCl ₂ , KCOOH, NaBr, CaBr ₂ , ZnBr ₂ , CsCOOH)	High concentrations combined with low temperatures result in salt encrustation. Prolonged exposure with no fresh water could result in salt toxicosis.	Direct, oral	Varies by salt. Typically skin, gastrointestinal tract, respiratory tract	CaBr ₂ : skin irritant CaCl ₂ : NOAEL, oral, rats 1000–2000 mg/kg bw/day for 12 months. An RDI > 1000 mg each of the ions is recommended. A developmental toxicity study revealed no toxic effects on dams or fetuses at doses up to 189 mg/kg bw/day (mice), 176 mg/kg bw/day (rats) and 169 mg/kg bw/day (rabbits). Formates: NaCOOH LD ₅₀ oral rat > 3000 mg/kg; KCOOH LD ₅₀ oral mouse 5500 mg/kg; CsCOOH LD ₅₀ oral rat 1780 mg/kg NaBr: Low oral toxicity. Eye, skin irritant. KCl: Gastrointestinal irritant effects in humans caused by KCl administered orally have been reported at doses from about 31 mg/kg bw/day. NaCl: oral acute toxicity 500–1,000 mg sodium chloride/kg body weight; vomiting, ulceration of the gastrointestinal tract, muscle weakness and renal damage, dehydration, metabolic acidosis and severe peripheral and central neural effects. Chronic effects of high intakes (>6 g/day) include the development of hypertension. In rodents, extremely high doses of sodium chloride during pregnancy caused musculoskeletal abnormalities, fetotoxicity. ZnBr ₂ : Inhalation can cause irritation of mucous membranes and upper respiratory tract (lung damage, burning, coughing, wheezing, laryngitis, shortness of breath), headache, nausea and vomiting. Ingestion causes severe burns of the mouth, throat, and stomach, vomiting and diarrhea, central nervous system depression. Eye and skin irritation and burns.	IPIECA/ OGP, 2009
Iron carbonate	FeCO ₃	Unknown	Direct, oral	Unknown	Most data for ferrous sulfate. LD ₅₀ oral rat FeSO ₄ is 319–1480 mg/kg. Calves fed 4000 ppm FeCO ₃ diet no effects.	IPIECA/ OGP, 2009
Hematite	Fe ₂ O ₃	Unknown	Direct, oral	None	LD ₅₀ oral rat > 10,000 mg/kg	IPIECA/ OGP, 2009
Caustic Soda	Sodium hydroxide	Unknown	Inhalation; skin, eye contact	Respiratory system, lungs, skin, eyes	LDLo, oral, rabbit: 500 mg/kg LD ₅₀ , skin, rabbit: 1350 mg/kg Corrosive, irritant, irritating to respiratory tract. causes burns to mucous membranes, throat, esophagus, and stomach	OSHA. http://www.osha.gov/SLTC/etools/oilandgas/drilling/msds.html

Notes:

NOAELs - No Observable Adverse Effect Level

LD₅₀ - Lethal Dose, 50%

LDLo - Lethal Dose Low

NA - Not Applicable

TABLE 3. AVIAN PROTECTION OPTIONS AND SCHEDULE
AVIAN PROTECTION PLAN
SM ENERGY COMPANY

Asset to be Protected	Temporary Protection	Schedule	Permanent Protection	Schedule
Reserve Pits	Hazing	Between Drill Rig Removal and Placement of Permanent Protective Measures	Netting, Bird Balls	Until permanently closed
Closed-Loop Drilling	Not Applicable	During Active Operations	If liquids present see Reserve Pits	If liquids remain upon completion utilize Reserve Pit Temporary and Permanent protection.
Freshwater Frac Ponds	Not Applicable	Not Applicable	NA	NA
Freshwater Flowback Pits	Not Applicable	Not Applicable	Netting, Bird Balls (if contains contaminated water not pumped into a flowback tank)	Until permanently closed
Produced Water Pits	Not Applicable	Not Applicable	Netting, Bird Balls	Until permanently closed
Source Water Pits	Not Applicable	Not Applicable	NA	NA
Secondary Containment of Aboveground Storage Tanks (AST)	Not Applicable	Not Applicable	Cover, netting	Until removed from site
Buildings and Equipment	Not Applicable	During Active Operations	Netting, Wire, Mesh	Until removed from site
Powerline Connections to Meter Boxes	Not Applicable	Not Applicable	Anti-perching, Anti-collision	Until lease is terminated

Note:

NA - Not Applicable

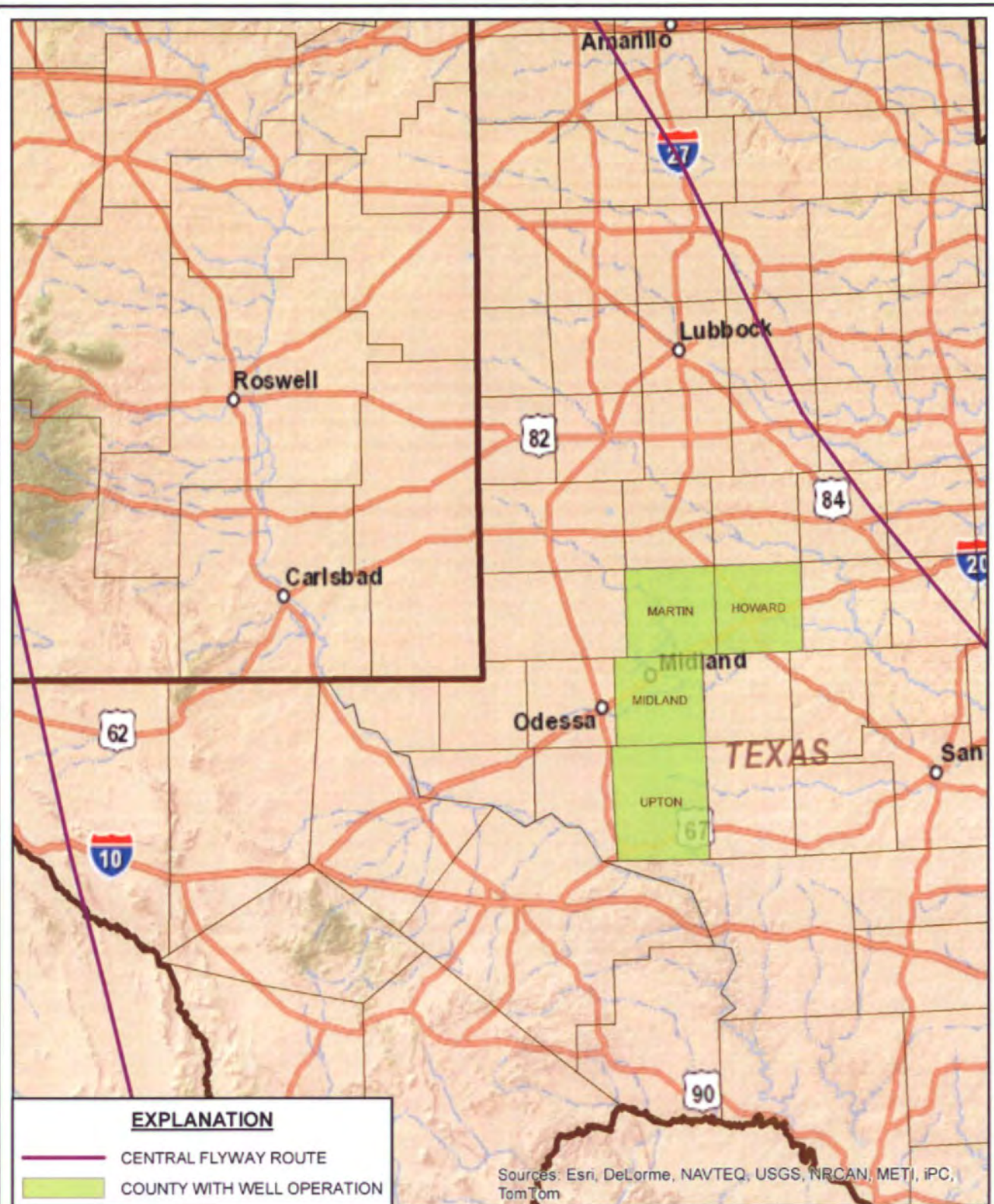
**TABLE 4. SME, USFWS, AND TRIHYDRO CONTACT INFORMATION
AVIAN PROTECTION PLAN
SM ENERGY COMPANY**

SM Energy Company's Bird Incident Control Operator		
(b) (6) Corporate EH&S Manager	SM Energy Company 1775 Sherman Street, Ste. 1200 Denver, Colorado 80203	(303) 864-2567 (ofc) (b) (6)
SM Energy Company's Regional Contacts		
South Texas / Gulf Coast	Permian	
(b) (6) Houston Regional EHS Manager (281) 670-1081 (ofc) (b) (6) (b) (6) Sr. Regional Environmental Specialist (281) 670-1095 (ofc) (b) (6)	(b) (6) Midland Regional EHS Manager (432) 688-3391 (ofc) (b) (6) (b) (6) Sr. Regional EHS Specialist (432) 688-1703 (ofc) (b) (6)	
USFWS Office of Law Enforcement¹		
Texas (South Texas/Gulf Coast Region)		
Special Agent	Texas Law Enforcement Office Houston, Texas	(936) 271-2250
Texas (Permian Region)		
Special Agent	Texas Law Enforcement Office Lubbock, Texas	(806) 472-7273
SEE THE USFWS WEBSITE BELOW FOR ADDITIONAL CONTACT INFORMATION¹		
Trihydro Bird Support Staff Contact Information		
(b) (6)	Trihydro Project Manager/Wildlife Biologist	(307) 745-7474
Bird Rehabilitator Contact Information		
South Texas / Gulf Coast	Permian	
Wildlife Rescue and Rehabilitation Kendalia, TX (830) 336-2725 (24/7)	(b) (6) A to Z Veterinary Clinic, Midland, TX (432) 425-3533 (24/7) (432) 520-8387	(b) (6) Wildlife Rehabilitation Specialist Odessa, TX (432) 770-0641
Wildlife Rescue and Rehabilitation San Antonio, TX (210) 257-8823 (b) (6) Texas Seaside Center Corpus Christi, TX (281) 455-0477 (361) 589-4023	(b) (6) Permitted Home Rehabilitator Big Spring, TX (432) 267-6536	South Plains Wildlife Rehabilitation Center Lubbock, Texas (806) 799-2124

Note:

¹ <http://www.fws.gov/southwest/lawenforcement/statecontacts.html>

FIGURES



Trihydro
CORPORATION
1252 Commerce Drive
Laramie, WY 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 1
TEXAS COUNTIES WITH
WELL OPERATIONS AS OF 2018
PERMIAN REGION

AVIAN PROTECTION PLAN
SM ENERGY COMPANY

Drawn By: BR Checked By: AM Scale: 1" = 50 Miles Date: 9/13/18 File: Fig1_SME_Permian_TX_NM_201809.mxd



EXPLANATION

- CENTRAL FLYWAY ROUTE
- MISSISSIPPI FLYWAY ROUTE
- COUNTY WITH WELL OPERATIONS



Trihydro
CORPORATION
1252 Commerce Drive
Laramie, WY 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 2

**TEXAS COUNTIES WITH
WELL OPERATIONS AS OF 2018
SOUTH TEXAS/GULF COAST REGION**

**AVIAN PROTECTION PLAN
SM ENERGY COMPANY**

Drawn By: BR

Checked By: AM

Scale: 1" = 50 Miles

Date: 6/19/17

File: Fig4_SME_GulfCoast_STX_201706.mxd

APPENDIX A

STATE REGULATIONS PERTAINING TO RESERVE PITS, AVIAN PROTECTION PLAN

SM ENERGY COMPANY

PERMIAN AND SOUTH TEXAS / GULF COAST REGIONS

**APPENDIX A. STATE REGULATIONS PERTAINING TO RESERVE PITS
AVIAN PROTECTION PLAN
SM ENERGY COMPANY, PERMIAN AND SOUTH TEXAS/GULF COAST REGIONS**

TEXAS

RULE §3.22 Protection of Birds

(a) If an operator who maintains a tank or pit does not take protective measures necessary to prevent harm to birds, the operator may incur liability under federal and state wildlife protection laws. Federal statutes, such as the Migratory Bird Treaty Act, provide substantial penalties for the death of certain species of birds due to contact with oil in a tank or pit. These penalties may include imprisonment. State statutes also protect certain species of birds. The Railroad Commission of Texas (commission) is cooperating with federal and state wildlife authorities in their efforts to protect birds.

(b) An operator must screen, net, cover, or otherwise render harmless to birds the following categories of open-top tanks and pits associated with the exploration, development, and production of oil and gas, including transportation of oil and gas by pipeline:

- (1) open-top storage tanks that are eight feet or greater in diameter and contain a continuous or frequent surface film or accumulation of oil; however, temporary, portable storage tanks that are used to hold fluids during drilling operations, workovers, or well tests are exempt;
- (2) skimming pits as defined in §3.8 of this title (relating to Water Protection) (Statewide Rule 8); and
- (3) collecting pits as defined in §3.8 of this title (relating to Water Protection) that are used in skimming pits.

(c) If the commission finds a surface film or accumulation of oil in any other pit regulated under §3.8 of this title (relating to Water Protection), the commission will instruct the operator to remove the oil. If the operator fails to remove the oil from the pit in accordance with the commission's instructions or if the commission finds a surface film or accumulation of oil in the pit again within a 12-month period, the commission will require the operator to screen, net, cover, or otherwise render the pit harmless to birds. Before complying with this requirement, the operator will have a right to a hearing upon request. In addition to the enforcement actions specified by this subsection, the commission may take any other appropriate enforcement actions within its authority.

RULE §3.8 Water Protection

(H) Backfill requirements.

- (i) A person who maintains or uses a reserve pit, mud circulation pit, fresh makeup water pit, fresh mining water pit, completion/workover pit, basic sediment pit, flare pit, or water condensate pit shall dewater, backfill, and compact the pit according to the following schedule.
 - (I) Reserve pits and mud circulation pits which contain fluids with a chloride concentration of 6,100 mg/liter or less and fresh makeup water pits shall be dewatered, backfilled, and compacted within one year of cessation of drilling operations.
 - (II) Reserve pits and mud circulation pits which contain fluids with a chloride concentration in excess of 6,100 mg/liter shall be dewatered within 30 days and backfilled and compacted within one year of cessation of drilling operations.
 - (III) All completion/workover pits used when completing a well shall be dewatered within 30 days and backfilled and compacted within 120 days of well completion. All completion/workover pits used

**APPENDIX A. STATE REGULATIONS PERTAINING TO RESERVE PITS
AVIAN PROTECTION PLAN
SM ENERGY COMPANY, PERMIAN AND SOUTH TEXAS/GULF COAST REGIONS**

when working over a well shall be dewatered within 30 days and backfilled and compacted within 120 days of completion of workover operations.

(V) (iii) The director may require that a person who uses or maintains a reserve pit, mud circulation pit, fresh makeup water pit, fresh mining water pit, completion/workover pit, basic sediment pit, flare pit, non-commercial fluid recycling pit, or water condensate pit backfill the pit sooner than the time prescribed by clause (i) of this subparagraph if the director determines that oil and gas wastes or oil field fluids are likely to escape from the pit or that the pit is being used for improper storage or disposal of oil and gas wastes or oil field fluids.

(iv) Prior to backfilling any reserve pit, mud circulation pit, or completion/workover pit, basic sediment pit, flare pit, non-commercial fluid recycling pit, or water condensate pit whose use or maintenance is authorized by this paragraph, the person maintaining or using the pit shall, in a permitted manner or in a manner authorized by paragraph (3) of this subsection, dispose of all oil and gas wastes which are in the pit.

[https://texreg.sos.state.tx.us/public/readtac\\$ext.ViewTAC?tac_view=4&ti=16&pt=1&ch=3&rl=Y](https://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=4&ti=16&pt=1&ch=3&rl=Y)

APPENDIX B

**U.S. FISH AND WILDLIFE SERVICE APRIL 11, 2018
GUIDANCE ON THE RECENT M-OPINION AFFECTING THE MBTA**



In Reply Refer To:
FWS/AMB/067711

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Washington, D.C. 20240

APR 11 2018



Memorandum

To: Service Directorate (b) (6)

From: Principal Deputy Director

Subject: Guidance on the recent M-Opinion affecting the Migratory Bird Treaty Act

To ensure consistency with the recently issued M Opinion, the U.S. Fish and Wildlife Service (FWS) is modifying some policies and practices within its programs. This memorandum provides guidance to clarify what constitutes prohibited take, what actions must be taken when conducting lawful intentional take (e.g., obtain a permit via 50 C.F.R. Part 21), and what changes to prior practice should be made in light of the M-Opinion.

The M-Opinion concludes that the take of birds resulting from an activity is not prohibited by the MBTA when the underlying purpose of that activity is not to take birds. We interpret the M-Opinion to mean that the MBTA's prohibitions on take apply when the *purpose* of an action is to take migratory birds, their eggs, or their nests. Conversely, the take of birds, eggs or nests occurring as the result of an activity, the purpose of which is not to take birds, eggs or nests, is not prohibited by the MBTA.

The mission of the Service is to work with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people. Migratory bird conservation remains an integral part of our mission. Further:

1. The Endangered Species Act (16 U.S.C. 35 § 1531 et seq.; ESA) and Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668-668c; Eagle Act), as well as some State laws and regulations are not affected by the M-Opinion.
2. The National Environmental Policy Act (NEPA, 42 U.S.C. § 4321 et seq.) provides a process under which federal agencies must evaluate the impacts of their actions on the human environment [including the natural and physical environment and relationship of people with that environment (40 C.F.R. § 1508.14)] and provide transparency to the American public. Birds are part of the human environment, and should be included in relevant environmental review processes as directed by NEPA.

The Service will continue to work with any partner that is interested in voluntarily reducing impacts to migratory birds and their habitats. We will continue to develop best management practices to protect migratory birds and their habitats in partnership with any industry, federal, state, and tribal entity as interest dictates, and in the course of project review, will continue to

provide recommendations through our advisory role under other authorities, including NEPA and the Fish and Wildlife Coordination Act (16 U.S.C. §§ 661-667e). The Service will clearly communicate relevant authorities under which we make our recommendations. The Service will ensure that our comments, recommendations, or requirements are not based on, nor imply, authority under the MBTA to regulate incidental take of migratory birds. Furthermore, the Service will not withhold a permit, request, or require mitigation based upon incidental take concerns under the MBTA. Attached is a set of questions and answers that serve to clarify the effect of the M-Opinion.

If you have additional questions, please contact the Migratory Bird Program, 202-208-1050.

Attachment

ATTACHMENT

FREQUENTLY ASKED QUESTIONS REGARDING IMPLEMENTATION OF THE M-OPINION

1. **Clarity on the distinction between *intent* to take a bird versus *knowing* a bird will be taken. Does the underlying legality of an activity that takes birds affect that distinction and does *reducing a bird to possession* have any bearing on the situation? The following examples are real situations the Service may face under the new M-Opinion:**

- a. **A State Department of Transportation wants to paint a bridge. Prior to painting the bridge, all Barn Swallow nests are pressure washed off the bridge, which would result in destruction of eggs and death of nestlings. Is the intentional removal of nests prior to painting the bridge intentional take and does it require a permit prior to the action?**

Answer: Yes. The intentional removal of active barn swallow nests, killing eggs and nestlings, is an affirmative act that has the taking of active nests and contents as its purpose. Because this example stipulates that the removal of nests prior to painting was purposeful, a permit would be required to legally authorize this activity. If the intent was to simply paint the bridge and the nests were accidentally destroyed incidental to that process, that destruction would not violate the MBTA.

- b. **A homeowner knows that Chimney Swifts are nesting in their chimney. If the homeowner lights a fire and destroys the nests, is this considered intentional take or incidental take under the M-Opinion?**

Answer: Possibly either, but more information is needed to determine whether the homeowner lit the fire to intentionally destroy swift nests or simply lit the fire to heat the house. The difference between this activity and the previous example is the subjective purpose of the activity. The intentional destruction of chimney swift nests by lighting a fire would constitute an intentional act, the purpose of which is to destroy nests. Whether lighting the fire violates the MBTA in that scenario would also depend on whether nests are active and contain eggs, young, or adult birds that could not escape quickly enough. A permit would be required to legally authorize this activity if the purpose is to destroy nests and they are active. A permit would not be needed if the homeowner lit the fire for the purpose of heating the house regardless of whether they were aware of swift nests in the chimney. Note that although knowledge of the presence of a nest or nests before lighting a fire would not be enough by itself to constitute a violation of the Act, it could be used as evidence to show the homeowner did in fact light the fire with the purpose of destroying the nests.

- c. Is removing a structure (e.g., dilapidated barn) with known nesting owls in the barn, which will die with the destruction of the barn, a violation of MBTA? How does knowledge or reasonable foreseeability that that an activity will kill birds affect whether that action violates the MBTA?**

Answer: This would not be a violation of the MBTA. Removing or destroying the structure would rarely if ever be an act that has killing owl nestlings as its purpose. Again, the purpose of the activity determines whether this is an MBTA violation. Unless the purpose of removing the structure was in fact to kill the owls, their deaths would be incidental to the activity of removing the barn. The landowner's knowledge, or whether it was reasonably foreseeable, that destroying the barn would kill the owls is not relevant. All that is relevant is that the landowner undertook an action that did not have the killing of barn owls as its purpose.

This same analysis would apply to other structures, such as bridges.

- d. A rancher shoots Black Vultures on his property without obtaining a depredation permit (50 C.F.R. § 21.41 – Depredation Permits). The rancher leaves the dead birds without subsequently collecting (possessing) them. Does the desire to, or failure to reduce a bird to possession affect whether that action violates the MBTA?**

Answer: Shooting Black Vultures without a permit violates the MBTA because it is an affirmative action that has killing birds as its purpose. The traditional definition of the term "take" includes reducing wildlife to human control, as noted in the M-Opinion. However, purposeful killing does not necessarily require any desire or affirmative action to gain possession of the birds. Shooting and killing migratory birds renders them subject to human control whether or not the shooter physically takes possession of the bodies. In fact, this issue was expressly addressed in footnote 132 of the M-Opinion: "We note that this language makes clear that the sort of 'human control' referred to by Justice Scalia includes the act of intentionally killing even in the absence of further intent to reduce the particular animal to human possession. Thus, intentional killing is itself a form of 'human control'." Note that shooting at and missing a black vulture would also be a violation (attempt), which obviously could not result in reducing the bird to possession.

- 2. How does the legality of an activity affect the determination of whether it is an MBTA violation or not? For example, if an illegal activity kills birds, but that was not the intent of the activity (e.g., using a banned pesticide, or without following application labels in violation of Federal Insecticide Fungicide Rodenticide Act (FIFRA)) is this still considered an incidental taking that is not a violation of the MBTA?**

Answer: The legality of an activity does not affect the determination of whether it results in an MBTA violation. Thus, if the landowner in the example used the pesticide with specific intent to kill birds, it would violate the MBTA. However, if the landowner used a pesticide to purposely kill something other than migratory birds, it would not be a violation if birds die as

a result because the purpose of the act was not taking of birds. If the landowner used a pesticide with the general intent of killing wildlife, and the pesticide killed protected bird species, that could be a violation of the MBTA but liability would likely turn on the facts of the specific case. Note, applying a pesticide illegally in a way that ends up killing birds when they are not the intended target may not be an MBTA violation, but the fact that birds died may still provide additional evidence for prosecuting the FIFRA violation.

3. How does the M-Opinion affect existing statutory amendments to the MBTA that specifically address incidental take, such as P.L. 107-314, Sec. 315 and subsequent regulation (50 C.F.R. § 21.15 – Authorization of take incidental to military readiness activities) or P.L. 114-94, Sec. 1439 (the FAST Act)?

Answer: The M-Opinion does not affect the military-readiness rule at 50 C.F.R. § 21.15, which was the result of Congress's direction to the Secretary of the Interior to prescribe regulations authorizing incidental take of migratory birds during military-readiness activities. Thus, the Secretary could only withdraw the rule if directed to do so through subsequent legislation. As the M-Opinion explains, "Congress was acting in a limited fashion to preempt a specific and immediate impediment to military-readiness activities." M-Opinion, p. 31. FWS and the Department of Defense (DOD) should continue to follow the requirements of the military-readiness rule. Nonetheless, incidental take of migratory birds by DOD does not violate the MBTA, regardless of whether DOD is complying with the terms of the military-readiness rule.

The FAST Act authorizes take of nesting swallows that interfere with bridge construction in certain circumstances. In most circumstances, such take would be considered purposeful and thus prohibited by the MBTA. Accordingly, the M-Opinion should not affect authorization of the take of active swallow nests. To the extent the FAST Act was intended to authorize incidental take, the terms of that statute should still be complied with for the same reasons discussed above for the military-readiness rule legislation.

4. What effect does the M-Opinion have on current settlement agreement negotiations to address incidental take of migratory birds or court-mandated permits resulting from past settlement agreements?

Answer: Current settlement agreement negotiations should not address incidental take of migratory birds for purposes of enforcing the MBTA, but may still include measures necessary to comply with other relevant statutes when appropriate (for example statutes implemented by the Natural Resource Damage Assessment and Restoration program (NRDAR, as explained below). The Department is currently reviewing the Service's position on current negotiations to address incidental take of bald and golden eagles under the Eagle Act. These species are also covered under the MBTA. The Service has brought seven enforcement actions against companies for incidental take of eagles since 2015, which included both MBTA and Eagle Act charges. Only one of these remains unresolved; the other six were resolved through settlement agreements. The Service will no longer pursue MBTA charges against projects that cause eagle deaths, but the M-Opinion does not affect the Service's ability to bring Eagle Act claims in these cases.

We are not aware of any court-authorized settlement agreements that mandate obtaining a permit to cover future incidental take of migratory birds under the MBTA. Since 2013, the Department of Justice has brought two prosecutions for take of eagles and species protected only by the MBTA. These prosecutions were resolved at the request of defendants based on MBTA violations only, although the conduct could also have been charged under the Eagle Act with regard to the eagle deaths. These plea agreements provided that companies must implement plans aimed at preventing bird deaths at eight commercial wind projects and apply for eagle permits to cover incidental take of eagles under the Eagle Act. The Service Chief of Law Enforcement's Directive applying to civil administrative enforcement of avian take at wind projects includes a limited option for settlements to resolve violations of the MBTA. However, that option is no longer operable after issuance of the M-Opinion. We are currently determining whether the M-Opinion will require the Service to revisit past settlement agreements that require ongoing implementation of best management practices to avoid or reduce incidental take of migratory birds by wind-energy facilities and other industrial activities.

5. How does the M-Opinion affect the Natural Resources Damage Assessment program (i.e., specifically related to oil spills)?

Answer: The M-Opinion does not directly affect the NRDAR program because statutory authorities that provide the basis for the program do not include the MBTA. Pursuant to Comprehensive Environmental Response Compensation and Liability Act, Oil Pollution Act, and Clean Water Act, the Department is authorized to assess injury to natural resources caused by releases of hazardous substances and discharges of oil to compensate the public for lost natural resources and their services. The Department's assessment of natural resource injuries under the NRDAR program include any injury to migratory birds, which in many cases could otherwise be classified as incidental take.

In practice, however, the M-Opinion will have an effect on future claims seeking fines or penalties for violations of the MBTA from companies responsible for oil spills and hazardous releases. In addition to pursuing damage claims under the NRDAR program, the Department has pursued MBTA claims against companies responsible for oil spills that incidentally killed or injured migratory birds. That avenue is no longer available.

6. How does the M-Opinion affect consultations or habitat conservation plans under sections 7 and 10 of the ESA?

Answer: When processing Habitat Conservation Plans under Section 10 or consulting on Section 7 of the ESA, incidental take coverage should only include listed species listed under the ESA. As concluded in the M-Opinion, incidental take of migratory birds is not prohibited so no restrictions, minimization measures, or mitigation should be part of an incidental take permit or an incidental take statement for purposes of the MBTA (rather than the ESA). An applicant or federal government action agency can take voluntary measures related to migratory birds but it must be made clear that no such actions are required by the MBTA.

7. How does the M-Opinion affect technical assistance under the Avian and Bat Conservation Plans?

Answer: Technical assistance can still be given in development of Avian and Bat Conservation Plans. However, any suggestions or guidance related to migratory birds must be relayed as completely voluntary actions. Part of the technical assistance should include the statement that incidental take of migratory birds is not prohibited by the MBTA.

APPENDIX C

**U.S. FISH AND WILDLIFE SERVICE JUNE 14, 2018 DESTRUCTION AND RELOCATION OF
MIGRATORY BIRD NEST CONTENTS MEMO FREQUENTLY ASKED QUESTIONS**



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington, D.C. 20240



In Reply Refer To:
FWS/DMBM/AMB/068029

JUN 14 2018

Memorandum

To: Regional Directors

From: Assistant Director, Migratory Bird (b) (6)

Subject: Destruction and Relocation of Migratory Bird Nest Contents

The purpose of this memorandum is to clarify the application of the Migratory Bird Treaty Act (50 C.F.R. §§ 703-712; MBTA) to the destruction and relocation of migratory bird¹ nests and provide guidance for advising the public regarding this issue. This Memo replaces Migratory Bird Permit Memorandum MBPM-2 on Nest Destruction (Apr 15, 2003). This memo does not supersede or apply to other Federal, State, or Tribal laws and regulations, including the Endangered Species Act (16 U.S.C. §§ 1531; ESA) and the Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668-668d; Eagle Act).

BACKGROUND:

The MBTA protects migratory birds, including migratory bird nests, eggs, and chicks. The prohibitions of the MBTA include *possession, transport, import, export, purchase, sale, barter, and take*. The regulatory definition of take, as defined by 50 C.F.R. § 10.12, means to *pursue, shoot, wound, kill, trap, capture, or collect, or attempt thereof*. This memo clarifies the Service's interpretation of how these prohibitions apply to migratory bird nests, eggs, and chicks.

The MBTA does not prohibit the destruction of an inactive² migratory bird nest, provided that no possession occurs during the destruction and no permit or other regulatory authorization is required (see Policy #1 below). Additionally, the Service should make every effort to inform the public of how to minimize the risk of killing migratory bird species whose nesting behaviors make it difficult to determine occupancy status or continuing nest dependency (e.g., cavity and burrow nesting species).

¹ A list of species protected by the MBTA can be found at 50 C.F.R § 10.13

² An active nest is one that contains viable eggs and/or chicks. A nest becomes active when the first egg is laid and remains active until fledged young are no longer dependent on the nest. Nests that are empty, contain non-viable eggs, or are being built but do not yet have an egg in them are considered inactive.

On December 22 2017, the Department of Interior released M-Opinion 37050 (Opinion) regarding whether incidental take (the taking of migratory birds that results from an activity, but is not the purpose of the activity) is prohibited under the MBTA. The Opinion concludes that "the MBTA's prohibition on pursuing, hunting, taking, capturing, killing, or attempting to do the same applies only to direct and affirmative purposeful actions that reduce migratory birds, their eggs, or their nests, by killing or capturing, to human control" (M-Opinion, pg. 41). The Opinion clarifies that the MBTA does not prohibit the incidental or unintentional take of migratory birds and/or their active nest contents.

Therefore, an individual or entity may destroy an active nest while conducting any activity where the intent of the action is not to kill migratory birds or destroy their nests or contents. However, because the MBTA specifically protects migratory bird nests, eggs, chicks, and adults from possession and transport without a permit, individuals and entities cannot, in most cases, take reasonable protective actions (such as removing eggs and chicks prior to nest destruction or relocating nests) without first obtaining authorization to do so.

Currently, there are two mechanisms explained in Policy #2 and Policy #3 below for the temporary possession and transport of healthy, unaffected birds for the purpose of removing them from imminent danger (i.e., immediate threat of mortality). Policy #2 explains in more detail the Service's Good Samaritan provision included in the Rehabilitation regulation (50 C.F.R. § 21.31(a)). Policy #3 outlines the permitting mechanism under the Special Purpose regulation (50 C.F.R. § 21.27) for active nest situations that fall outside the Good Samaritan provision.

POLICY:

1. Inactive Nest Destruction

A permit or other regulatory authorization is not required under the MBTA to destroy an inactive migratory bird nest³, provided no possession occurs during or after the destruction. The MBTA does not authorize the Service to issue permits in situations where the prohibitions of the Act do not apply, such as the destruction of inactive nests.

The public should be made aware that, due to the biological and behavioral characteristics of some migratory bird species, destruction of their nests entails an elevated risk of unknowingly killing them. For example, it is difficult to detect whether or not the nest of a cavity-nesting species, such as a burrowing owl or a bank swallow, is active. Before destroying this type of nest, we recommend consulting with an expert (e.g., USDA-Wildlife Services, Wildlife Professionals, Environmental Consultants, or Rehabilitation experts) who can help determine nest activity.

Inactive nests may be protected by federal statutes other than the MBTA, such as nests of bird species federally listed as threatened or endangered under the ESA as well as nests of bald eagles and golden

³ An inactive nest is one that is empty, contains non-viable eggs, or is being built but does not yet have an egg in the nest.

eagles, which are protected under the Eagle Act. State, Tribal, and local laws may also protect inactive bird nests. The Service should make every effort to ensure awareness regarding these possible additional protections and should inform the public of factors that will help minimize the likelihood that bird deaths would occur should nests be destroyed (i.e., when active nesting season normally occurs).

2. Good Samaritan Provision

For active nests, an individual or entity whose activity unintentionally or incidentally destroys an active nest, or is likely to do so, may collect the eggs or chicks and temporarily possess them for the purposes of transport to a federally-permitted rehabilitator under the Good Samaritan authorization in the rehabilitation regulation (50 C.F.R. § 21.31(a)). This Good Samaritan provision states: "Any person who finds a sick, injured, or orphaned migratory bird may, without a permit, take possession of the bird in order to immediately transport it to a permitted rehabilitator" (50 C.F.R. § 21.31(a)). The Service interprets the definition of "finds" to include encountering birds that become sick, injured, or orphaned while conducting activities where the intention is not to kill migratory birds or destroy their nests. "Finds" also applies when a planned activity is likely to cause or is about to cause destruction of an active nest resulting in the death, injury, or orphaning of eggs or chicks because, if nest destruction is imminent, any egg or chick in that nest can be considered orphaned. The Good Samaritan provision applies to the landowner of where the action is taking place and anyone designated to act on their behalf (e.g., wildlife professionals, pest-control contractors, rehabilitators, etc.). The Good Samaritan provision does not apply to regularly re-occurring actions where a single entity purposefully removes nests (e.g., a company that needs to purposefully remove nests from electrical distribution poles). For these situations a permit is recommended (see #3 below).

If the landowner is not comfortable with collecting the eggs or chicks, they may designate someone else to conduct the work on their behalf. After the eggs or chicks are collected, a federally-permitted rehabilitator may accept them as orphaned birds, consistent with their rehabilitation permit. All requirements and conditions of a rehabilitation permit apply. Rehabilitators have discretion as to what they will and will not accept and to determine the fate of any eggs or chicks accepted, including euthanasia. If a rehabilitator is unavailable or will not accept the eggs or chicks, the landowner (or the person acting on their behalf) may take the eggs or chicks to a licensed veterinarian who may temporarily possess, transfer, or euthanize the eggs or chicks without a permit (50 C.F.R. § 21.12(c)).

The Service can provide contact information for federally-permitted rehabilitators. The Service does not maintain or provide information on contractors, such as wildlife professionals, contractors, or pest control companies. Finally, the Service will provide information for voluntary reporting of active nest destruction in our Injury and Mortality Reporting System.

3. Special Purpose Permits

Permits are required to relocate a nest rather than destroy it, as possession of any nest is prohibited under the MBTA without prior authorization. Permits may also be appropriate for entities with ongoing

projects that regularly need to intentionally remove or destroy nests. In these cases, permits can authorize possession of nests for various purposes, including active and inactive nest relocation, collection of nest contents for humane disposal, a combination thereof, or other compelling justifications. The Service can issue Special Purpose permits (50 C.F.R. § 21.27) to individuals or entities in these situations. In the case of utilities, authorization to destroy or relocate active and inactive nests is covered by applying for a specific type of special purpose permit: Special Purpose – Utility (<https://www.fws.gov/forms/3-200-81.pdf>).

Biologically, the success of nest relocation varies widely based on a number of factors, such as the distance moved, the presence of chicks, the nesting substrate, and the tolerance of the species and individual birds. Service biologists can provide technical assistance as to whether or not nest relocation is likely to succeed. Nest relocation should only be recommended for consideration when likely to result in success or when there are no other viable alternatives to achieve a conservation outcome. Relocation permit conditions will include short-term monitoring requirements by the person doing the nest relocation to ensure adults return to attend to the nest and an alternative protocol in the event nest abandonment occurs (such as collection and transport to a rehabilitator or veterinarian for euthanasia).

4. Other Permits and Authorizations

Other situations where there is purposeful take of active nests may fall under different permit types or regulatory authorizations. The Service will advise when a different permit or authorization may be appropriate.

Attachment 1:
Migratory Bird Nest Destruction and Relocation
Frequently Asked Questions
June 14, 2018

The Service recommends conducting activities outside the bird nesting season to avoid the need for active nest relocation or destruction, when appropriate. This is because (1) successful reproduction is essential to healthy bird populations; (2) measures can often be taken in advance to prevent nesting where it will create a problem; (3) inactive nests and nests under construction may be proactively destroyed without a permit; and (4) most bird species have short nesting cycles, and it can be practicable to delay an activity until the nestlings have fledged.

Notes:

- "Bird" refers to any species federally protected under the Migratory Bird Treaty Act (50 C.F.R. § 10.13; MBTA).
- This document does not apply to Bald Eagles and Golden Eagles or federally listed threatened or endangered species. The Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668–668d) and the Endangered Species Act (16 U.S.C. §§ 1531) have additional protections for these species.
- States, Tribes, and local governments may have additional protections for active and/or inactive nests.

1. *Is a permit needed to destroy an inactive migratory bird nest?*

No. A permit is not required to destroy migratory bird inactive nests (i.e., nests without viable eggs or chicks), provided the nest is destroyed and not retained. From the time that one or more eggs are laid until chick(s) fledge, a nest is considered active and a permit is required for purposeful take of that nest. The Destruction and Relocation of Migratory Bird Nests Memorandum (MBPM-068029; 06/14/2018) provides additional guidance on inactive nest destruction (<http://www.fws.gov/policy/m0208.pdf>).

2. *Is a permit needed to conduct activities near an active migratory bird nest?*

No. A permit is not needed to conduct work near an active nest. An active migratory bird nest is one with viable eggs or live chicks present. We recommend caution when conducting activities near active nests due to the risk of nest failure. Nest failure occurs when a bird, egg, or chick is injured or killed or nest abandonment occurs as a result of the activity. If someone chooses to conduct activities near an active nest, we recommend contacting your local FWS Ecological Services or Regional Migratory Birds office to discuss voluntary best practices that may minimize impacts to nesting birds. To determine if best practices have been developed for specific industries see the USFWS, Migratory Bird Program Webpage at <https://www.fws.gov/birds/management/project-assessment-tools-and-guidance.php>

3. *Is a permit required to destroy an active bird nest?*

Yes. A permit is required for the **purposeful** take of an active migratory bird nest, such as active nests removed to resolve a depredation problem or activities that regularly need to intentionally remove or destroy active nests (e.g., purposefully removing nests from a structure such as an electric distribution pole). A permit is **not** required when conducting any activity where migratory birds and/or their eggs and chicks are accidentally killed during the activity (i.e., the intent of the activity is not to kill migratory birds).

Authorization is required to purposefully remove a nest or its contents prior to destruction. When eggs and chicks are in imminent danger of death from a lawful activity, there is a Good Samaritan provision that allows the collection of the nest contents without a permit for one-time, irregular, or highly infrequent occurrences. For frequent, regular occurrences of purposeful removal of an active nest or its contents, a Special Purpose permit may be appropriate. See the Destruction and Relocation of Migratory Bird Nests Memorandum for further information.

4. *Is a permit required to relocate a nest? When is relocation appropriate?*

Yes. A permit is always required to relocate an active nest, as the nest is in possession while being relocated. The decision to relocate or destroy an active nest is specific for each situation, bird species, and nest status. Some things to consider:

- a. *Are there eggs or chicks?* Relocation is most successful with chicks but rarely so with eggs.
- b. *Where is the nest?* If the nest is on a human-made structure, it may be easier to duplicate nest substrate and relocation may be more successful.
- c. *What is the species and its status?* Certain bird species and individuals are more tolerant to relocation than others.
- d. *Is it humane?* While sometimes counter-intuitive, active nest relocation can be less humane than nest destruction. Death from exposure and starvation is not humane; therefore, it is recommended that any nest relocation be monitored closely to verify adult birds return to attend to the nest and a back-up plan for removing the nest contents be in place. If the choice to relocate has a low chance of success, it is often best to contact a permitted rehabilitator to collect the nest contents and determine the appropriate disposition of those contents (i.e., rearing and release or euthanasia).

5. *How can rehabilitators help?*

Nest relocation or destruction cannot be done under a rehabilitation permit. However, migratory bird rehabilitators may provide technical expertise. Rehabilitators often have experience in nest relocations as well as caring for sick, injured, and orphaned birds in the event that removing nest contents is appropriate. They can provide guidance on whether or not chicks or eggs are likely to survive in a nest relocation attempt or during rehabilitation.

A list of federally-permitted rehabilitators can be found on the National Wildlife Rehabilitators Association webpage (http://www.nwrawildlife.org/?page=Find_A_Rehabilitator). The Service can provide contact information for federally-permitted rehabilitators. The Service does not maintain or provide information on contractors, such as wildlife contractors or pest control companies.

6. What authorizations are available for bird nests?

6.1. Birds in Buildings Regulatory Authorization

The general public, under certain conditions, may remove migratory bird nests from the interior of a building or structure if (i) posing a health threat, (ii) attacking humans, (iii) posing a threat to commercial interests, and (iv) the bird may injure itself. Additional conditions and requirements are detailed in 50 C.F.R. § 21.12(d).

6.2. Good Samaritan Provision

For active nests, an individual or entity whose activity unintentionally or incidentally destroys an active nest, or is likely to do so, may collect the eggs or chicks and temporarily possess them for the purposes of transport to a federally permitted rehabilitator under the good Samaritan authorization in the rehabilitation regulations at 50 C.F.R. § 21.31(a). The Service interprets the definition of "finds" to include finding birds that become sick, injured, or orphaned while conducting activities where the intention is not to kill migratory birds or destroy their nests.

"Finds" also applies when a planned activity is likely to cause or about to cause destruction of an active nest resulting in the death, injury, or orphaning of eggs or chicks because, if nest destruction is imminent, any egg or chick in that nest can be considered orphaned. The Good Samaritan provision applies to one-time, irregular, or highly infrequent occurrences, otherwise a permit is recommended.

6.3. Depredation Permits

Depredation includes agricultural damage, private/public property damage, threats to human health and safety, and threats to recovery of protected wildlife. A depredation permit can authorize active nest destruction or relocation when either the nest itself is causing damage or removal of the nest will relieve a depredation problem. The nest itself or birds attending to the nest must be contributing to physical damage or physical loss to constitute a depredation problem, and must not merely be causing a nuisance.

Applicants must meet depredation issuance requirements, including demonstrating that they have implemented practicable nonlethal measures, such as destroying inactive nests, exclusions, hazing, and habitat modification prior to applying for a permit. For more information see the Fact Sheet on Depredation Permits (<http://www.fws.gov/forms/3-200-13.pdf>).

6.4. Utility Permits

Special Purpose Utility Permits (SPUT) can be issued to utilities with nest concerns. A utility includes, but is not limited to, a business that owns or operates a facility that generates or transmits electricity, gas, oil, water, or communications structures such as cellular towers, microwave transmitters and their related infrastructure, as well as resource development and recovery businesses.

Utility permits can authorize the relocation and/or destruction of nests found on the utility structures when (1) the safety of the migratory birds, nests, or eggs is at risk, or (2) the migratory birds, nests, or eggs pose a threat of serious bodily injury or a risk to human life,

including a threat of fire hazard, mechanical failure, or power outage. This permit does not apply to situations in which birds are merely causing a nuisance or inconvenience, such as construction and routine maintenance, or to eagle nests. This permit also does not apply to clearing an area of active bird nests to reduce the likelihood of collision with infrastructure. For more information see the Fact Sheet for Utility Permits (<http://www.fws.gov/forms/3-200-81.pdf>).

6.5. Scientific Collecting Permits

Scientific Collecting Permits authorize active nest relocation or destruction for scientific research purposes only. The applicant must justify why this is an appropriate methodology for the research question they are seeking to answer. For more information, see the Fact Sheet for Scientific Collecting (<http://www.fws.gov/forms/3-200-7.pdf>).

6.6. Special Purpose Permits

If the activity does not fall into one of the categories above, the applicant may qualify for a Special Purpose permit. The Special Purpose regulation can be used to authorize active nest relocation or destruction when it is consistent with the MBTA for many otherwise lawful activities. The applicant must demonstrate how they meet at least one of the following criteria: (1) a sufficient showing of benefit to the migratory bird resource, (2) important research reasons, (3) reasons of human concern for individual birds, or (4) other compelling justification.

In general, requests for nest relocation or destruction are justified under "sufficient showing of the benefit to the migratory bird resource" (See 6.6.1) or "other compelling justification" (See 6.6.2.).

6.6.1. *What constitutes a sufficient showing of benefit to the migratory bird resource?*

An applicant may demonstrate that there is a benefit to the resource. The migratory bird resource can be the same species or different species as the species for which take is being requested under the permit. Supplemental Information may be requested as part of the application. A single document summarizing the organization's Best Management Practices may be developed by the applicant that includes benefits to the resource (e.g., habitat restoration, native landscaping, etc.), avoidance and minimization practices that will be implemented, and how the decision to intentionally relocate or destroy active nests will be made. While a Best Management Practices summary document is not required, the document can be referenced to streamline permit applications and conditions.

6.6.2. *What constitutes a compelling justification?*

An applicant may also demonstrate that there is a compelling justification that qualifies for a Special Purpose permit. Most commonly, a compelling justification often involves scenarios of multiple competing mandates, such as the MBTA and other federal laws, federal mandates, and/or court orders. Examples of a compelling justification include: a situation where two federal laws conflict (e.g., ESA requirements restrict the activity to only occur during bird nesting season); a critical infrastructure project that may affect human health and safety if not completed on schedule (such as emergency bridge repair); or protection of species of concern that would be harmed if not relocated (such as cavity or burrow nesters that primarily rely on

other species to create burrows). A compelling justification can also include that a planned activity that extends past the Good Samaritan provision (6.2 above) and is likely to cause or about to cause destruction of an active nest resulting in the death, injury, or orphaning of eggs or chicks.

7. What permits can authorize nest take to resolve financial loss?

Permits cannot be issued to resolve financial loss (i.e., construction delays, access to equipment) unless they meet one of the permit types above. If there is physical damage or physical loss in addition to financial loss, a Depredation permit can be issued for the purposeful removal of a nest. If there is solely financial loss, a Special Purpose permit is most appropriate; applicants must demonstrate a sufficient showing of benefit to the migratory bird resource or other compelling justification as described above.

8. What is incidental take and is an incidental take permit available?

On 22 December 2017, the Department of Interior released M-Opinion 37050 (Opinion) regarding whether incidental take (the taking of migratory birds that results from an activity, but is not the purpose of the activity) is prohibited under the Migratory Bird Treaty Act (16 U.S.C. §§ 703-712). The Opinion concludes that "...the MBTA's prohibition on pursuing, hunting, taking, capturing, killing, or attempting to do the same applies only to direct and affirmative purposeful actions that reduce migratory birds, their eggs, or their nests, by killing or capturing, to human control" (M-Opinion 37050, pg. 41). The Opinion clarifies that, under this interpretation, the MBTA does not prohibit the incidental or unintentional take of migratory birds and/or their active nests.

For individuals or entities seeking to voluntarily minimize impacts on migratory birds and their habitat may request technical assistance for suggested best practices can be referred to Service Migratory Bird biologists or Ecological Services offices. To determine if best practices have been developed for specific industries see the USFWS, Migratory Bird Program Webpage at <https://www.fws.gov/birds/management/project-assessment-tools-and-guidance.php>

APPENDIX D

**SITE INSPECTIONS AND BIRD CARE PROTOCOL, AVIAN PROTECTION PLAN
SM ENERGY COMPANY**

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SITE INSPECTIONS

- 1) The oil and gas production, tank batteries, and drill sites should be patrolled daily to look for injured birds or carcasses. A Site Inspection Checklist to be used by SME personnel is provided at the end of this appendix. If a bird is found, SME personnel must contact the SME Bird Incident Control Operator and not handle the bird. If directed and approved by the USFWS, the injured or entrapped birds may be retrieved or transported. Living birds may be rehabilitated (i.e. cleaned) only following USFWS-approved protocols. Dead migratory birds do not need to be reported to USFWS; however, carcasses should be properly retrieved and disposed of per instruction by the SME Bird Incident Control Operator. Once at the site, the following actions should be performed:
 - a) The site should be examined for leaks, spills, seepage, or drips. This includes examining open pits and tanks for the visible presence of oil, sheen, or other harmful chemicals as well as torn netting or sagging mylar strands.
 - b) Any open water and shoreline should be observed for bird activity, injured birds, and carcasses. Report the presence of birds (alive or dead) to the SME Bird Incident Control Operator.
 - c) Inspect each secondary containment tank or structure at the site. Secondary containment structures must be kept clean, dry, and/or protected such that birds cannot enter them. This includes containment structures or tanks that are out of service or otherwise not currently in use, as well as those that are currently in use.
 - d) Do not touch sick, injured, or contaminated birds. If such birds are observed on the site, immediately call the SME Bird Incident Control Operator. They will contact USFWS for instruction. Handling and transport of live or injured migratory birds requires special permits, and SM Energy does not have these permits. Be prepared to describe the condition of the bird in the greatest detail possible to the SME Bird Incident Control Operator.
 - e) Verify there are no injured birds under electrical wires or around the site.
 - f) Verify there are no birds trapped in buildings or within berms or other containments.
 - g) Verify that netting or other exclusionary measures are intact by performing visual inspections of netted reserve pits or open-top tanks to ensure that birds and other wildlife cannot contact oily fluid, solvents, or chemicals (e.g., examine netting for holes or gaps, or sagging into pit fluid). This includes inactive or out-of-service tanks or pits as well as those in current use.
 - h) A bird patrol should be conducted if there is oil or other fluids potentially hazardous to birds in the pits.
 - i) Birds can be spotted resting along the shore. Oiled birds are harder to detect as they may match the sediment/vegetation. In particular, look in downwind areas where weak birds may be blown by wind.
 - ii) Staffing and patrol frequency is determined as well by number of morbid or oiled birds relative to dead birds. If many morbid or oiled birds are observed, more staff are needed to work on retrieval.
 - i) All carcasses should be photographed in place. Report injured or dead birds immediately to the Bird Incident Control Operator.

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- j) Active nests must not be purposefully disturbed, damaged, removed, or destroyed. Active bird nests are those that have adults present, eggs or chicks, fresh nest material, or birds present in the immediate vicinity. During spring and summer months, assume that any nest is potentially active. During fall and winter months, nests are typically inactive. Inactive nests, unless they are eagle or threatened or endangered species nests, may be removed. If it is uncertain what species built the nest, the nest should not be disturbed. Report any nests on the site to the Bird Incident Control Operator for further instruction.
- 2) Corrective action should be implemented should the site inspection indicate an incident or potential incident is occurring. This includes immediate cleanup and removal/containment of spilled oil or other harmful chemicals, or repair of damaged bird protection measures (i.e., netting, anti-perching devices, hazing devices). If leaks are observed, repair of valves, pipelines, or other equipment leaking oil or other harmful chemicals should be immediately performed by qualified personnel unless there is an imminent safety hazard. The incident must be promptly reported to the Bird Incident Control Operator.

BIRD CARE PROTOCOL

If permission is given by the SME Bird Incident Control Operator, live impacted birds should be captured using care not to unduly stress the bird. Put nitrile gloves on to prevent chemical exposure to the handler. If the bird is large, has sharp talons (e.g., raptors) or a sharp beak (e.g., grebes), put on leather gloves over the nitrile gloves to prevent physical injury to the handler.

- a) Firmly hold the bird but do not apply pressure as their bones are fragile and they are already stressed. Use a light handshake gesture to apply pressure.
- b) Hold their wings close to their body to keep them calm. Keep them away from your face, as they will strike.
- c) Place them gently into a box for transport or wrap in soft rags and hold them if you are not driving.
- d) **IMPORTANT** - Keep the box inside the vehicle for warmth – the greatest immediate stress for these birds is hypothermia.
- e) Repeated hazing (scaring, bothering) is stressful for birds. If it appears that they will escape into the water before you can reach them, back off and come back later. If available, use a boat to coax the bird back onto shore where it can be picked up by another staff member.
- f) Walk slowly towards a bird. It helps to have another person approach from the other side. If possible, walk towards the bird between it and the water.
- g) Report birds found on site immediately to the Bird Incident Control Operator, who will confer with the USFWS, and notify the appropriate personnel and direct care of the bird until trained staff can arrive.

LIVE BIRD CARE BY REHABILITATORS

Birds can be taken to the regional avian rehabilitators (e.g. USFWS), or contact SME contractors handling avian issues and an avian technician will be supplied. A list of appropriate bird rehabilitation centers will be identified

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with the help of USFWS and disseminated to the appropriate personnel. The following procedure will be followed when cleaning birds.

- a) Record information (date, location collected, species, time) in logbook.
- b) Wear rubber or latex elbow gloves and safety goggles or face shield.
- c) Place bird in large tub of warm (85-90°F) water with Dawn detergent, 1%.
- d) Gently swirl water around bird. Use fingers to gently remove oily material. Do not scrub with a brush; use a soft rag if necessary to avoid damaging flight feathers. Cotton balls may be used on the face, and a soft toothbrush on the head, beak as needed. Use a q-tip to remove oily material from within mouth.
- e) When water gets dirty, transfer bird to a new bucket/tub of warm water.
- f) It may take 10 – 15 buckets/tubs of soapy water to remove oil or staining from the birds feathers.
- g) Then rinse the bird thoroughly in tubs of warm water (85 - 90° F) until water is clear of soap.
- h) If bird is getting agitated, after washing in 2-3 buckets of soapy water rinse well and place to dry and let it settle down before attempting further cleaning.
- i) Using a soft rag, blot as much water as possible from the bird.
- j) Place bird in holding tank in warm area with bowl of fresh drinking water to dry. Observe frequently but try to avoid undue stress.
- k) If bird does not look clean when dry, repeat procedure.
- l) Give all live captured birds 2-10 mls of Pedialyte® depending on size. Use a child's oral dosing syringe. Do not use grape flavored Pedialyte®, as birds dislike grape flavoring. Hold bird gently by crooking arm around it and open beak with left hand. Drip pedialyte down back of throat with right hand. Watch for swallowing motion of throat.
- m) Observe for signs of cold/stress. If bird begins preening and drinking, and its feathers are dry and clean looking, photograph bird, and contact USFWS for release instructions.

CARCASS RETRIEVAL

- 1) All carcasses should be photographed in-place.
- 2) Call the SME Bird Incident Control Operator for instructions on properly retrieving disposing of bird carcasses.

NEW INCIDENT REPORTING

All new incidents that result in avian harm must be reported to SME Bird Incident Control Operator.

SITE INSPECTION CHECKLIST

The following Site Inspection Checklist should be used by SME personnel when conducting daily inspections.

AVIAN PROTECTION PLAN SITE INSPECTION CHECKLIST

Date: _____

Inspector: _____

Location(s) Inspected: _____

Item	Yes	No	N/A	Comments/Corrective Actions
Are there any dead, injured, or trapped birds within our facilities?				
Are there any active bird nests or other evidence of heavy bird use/activity that are endangered by our operations?				
Are all open tanks, pits, tank battery dikes, and chemical tank secondary containments kept clean from visible oil, sheen, and chemicals, or effectively covered (netting, screens, etc.)?				
Are there any other leaks, spills, or drips to be cleaned up?				
Are any other necessary bird controls in place (hazing devices, witch hats, anti-perching strips, etc.)?				
Any dead, injured, or trapped birds, active bird nests or other high bird activity endangered by our operations, or corrective actions required for bird protection controls must be promptly reported to the Regional SM Bird Incident Control Operator (Regional EHS Manager).				